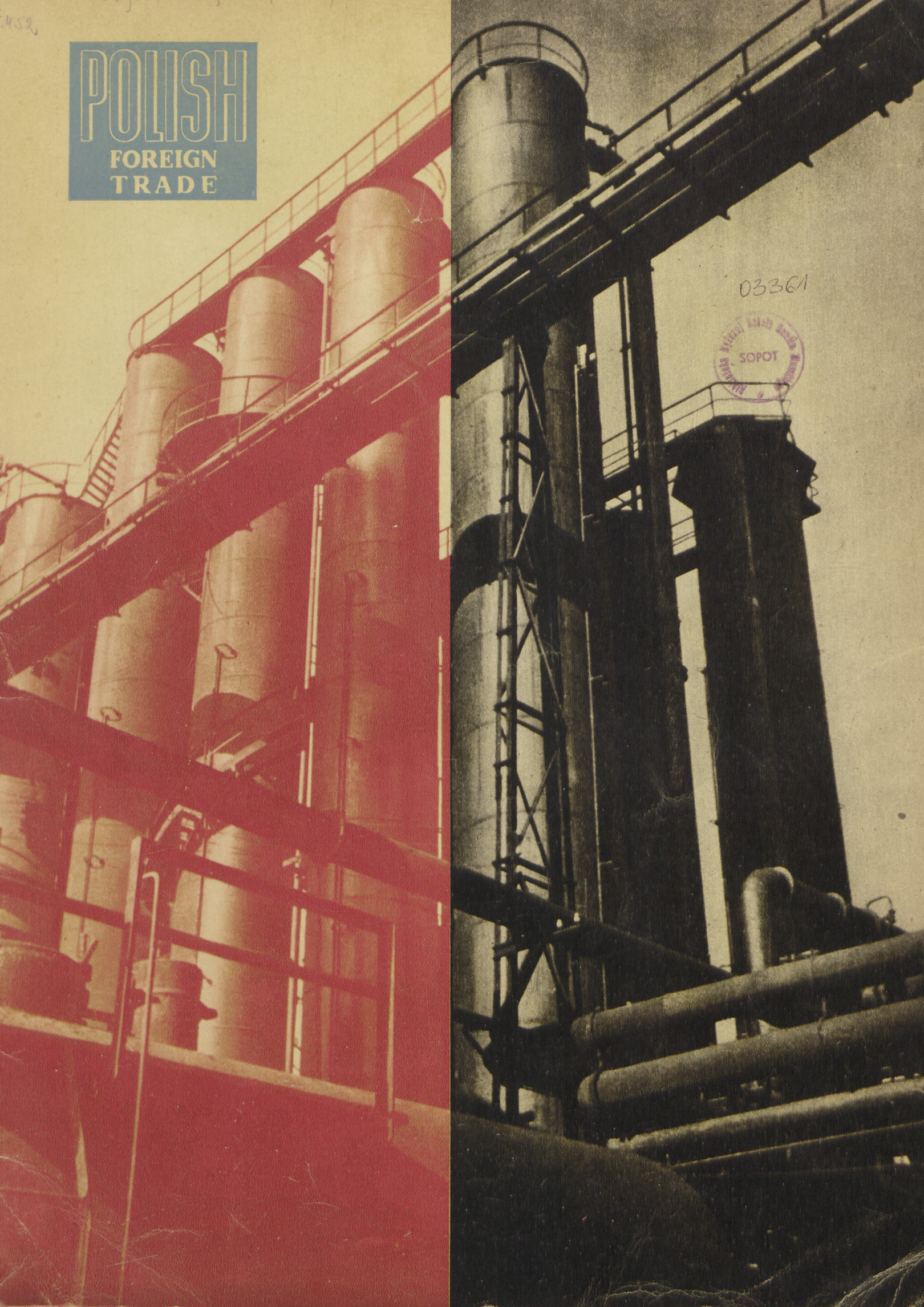
POLISH FOREIGN TRADE



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The output of Polish coal, basic power source and one of the main raw materials for the chemical industry, is steadily increasing, as a result of the devoted work of the miners and of the modern equipment used in mines

UTILISATION OF COAL

Coal is one of those few natural raw materials which can be put to immediate use in the state in which they are extracted from the depths of the earth.

The variety of forms — due to divergence in the properties of individual types of coal and to the varying requirements of individual users as regards type, grading and degree of cleanness — in which coal is being utilised both as power fuel and as a raw chemical material, calls, however, for the submission of run-of--mine coal, prior to its being put to actual use, to a system of mechanical processing, sizing, cleaning, breaking, blending and bricquetting.

The diagram on page 5 shows the procedure in the mechanica-

EDITORIAL

One year has gone by since first our periodical made its appearance. This initial year has proved that there existed a need for a publication giving to foreign economic circles information about what Poland is able to export, her import requirements and the role which Poland can play in international goods exchange. That this is so is reflected in foreign press opinions and in the numerous letters which reach us from foreign institutions, organisations and individual firms in almost all parts of Europe, the Near and Middle East, Central and Latin America, etc. Among the hundreds of letters and enquiries received from organisations and merchants is a high proportion from countries in which official circles exercise either an open or veiled policy of discrimination. These letters prove that there exists appreciation, over a wide economic sphere, of the mutual benefits accruing from an exchange of commodities based on equality of rights and governed by economic considerations.

Poland, a country rapidly developing its industrial and agricultural production potential, is of interest to those who, in their quest for partners, are guided by economic exigencies. The steady and rapid expansion of Polish industries, mining and agriculture consistently widens the scope of Poland's exports, and, the spectacular growth of Polish industry and the concomitant change in Poland's economic structure being devoid of all individualistic tendencies, is at the same time instrumental in increasing the country's demand for capital plant, current equipment, raw materials and consumer goods. The stronger Polish industry becomes, the greater will be its requirements, not merely for raw materials and capital equipment, but also for such innumerable items required for current production operations, as tools, ancillary equipment and so on. The wealthier Poland becomes, the higher will the standard of living of her people be raised and the higher its consumption of foreign goods. Polish industries offer, concurrently with their development, an increasing variety of new products, thus widening the range of goods available for export.

Mechanisation and intensification of Polish agricultural output, made possible by industrial expansion, will, in spite of the growing home demand, be conducive to increasing the export range of farm products.

Our desire to consolidate the links with our readers in the coming year has led us to enclose with this issue of our magazine a questionnaire; we shall be glad to receive your comments and wishes and to learn of the particular items you are interested in. We shall, in our mission to keep foreign readers informed of economic developments taking place in Poland, of Polish goods available for export and of Poland's requirements, try to comply in future with the wishes expressed by you. We believe that we are, in this way, serving, if only to a limited extent, the interests of peace and goodwill among nations, by furthering international goods exchange based on the principle of mutual advantage.

processing of run-of-mine coal, together with the more important methods of utilisation. These methods have been arranged serially, according to the principle that all familiar methods of coal utilisation can be considered as being processes of oxidation or hydrogenation. Thus, we arrive, in describing all processes from the point of their reference to oxygen or hydrogen, at the following sequence:

1. combustion
2. gasification
3. low-temperature carbonisation
4. gas production
5. coke production
6. extraction (as an intermediate process between oxidation and hydrogenation methods)
7. hydrogenation.

The combustion of coal for heat or steam raising takes place, as is generally known, in the presence of a certain amount and, possibly, an excess of oxygen.

The carbonisation of coal, intended to convert the solid into a gaseous fuel (producer gas, water gas, mixed gas, etc.) is, from the chemical point of view, a process of incomplete combustion.

Carbonisation is the next method in coal processing. It continues to be the most important industrial method of chemical processing. The carbonisation of coal takes place at higher and lower temperatures. High temperatures (1 000° C) are used by the gas and coke industries, whereas the lower temperatures (500°—600° C) are used in low-temperature carbonisation processes.

The process of carbonisation, or destructive distillation of coal, may also be treated as a mixed process, that is to say, one of incomplete oxidation and hydrogenation, which takes place without the agency of extraneous oxygen and hydrogen — relying merely on the oxygen and hydrogen contained within the coal substance. This is proved by the fact of there being obtained from thermal decomposition of the dry coal substance such products as carbon dioxide, carbon monoxide and water on the one hand, and hydrocarbons, such as methane, ethylene, benzole and many others — on the other.

Considering that the lower ranks of coal, containing more oxygen and less carbon (types 31—33), are invariably used for low-temperature carbonisation, whereas, the older ranks, from gas coal to semi-coking coal inclusive (types 33—37), come into consideration for high temperature carbonisation of coal, the low-temperature process of gasification has, in our diagram, been allowed to take precedence over the high-temperature process. The extraction process, when coal is treated with pyridine, tetraline, benzene etc., intervenes between the oxidation and hydrogenation processes. And, finally, the last process — hydrogenation — is a typical reduction process in which considerable quantities of hydrogen are added to the coal.

Coal as a fuel

Coal as a source of power still retains the lead among all natural power fuels in world economy. It is no exaggeration to declare that the industrial product or phase of every-day life does not exist in which coal does not, as a fuel, play an important role.

Progress in engineering has not only failed to produce a decline in the value of coal as a fuel, but is actually contingent itself on the magnitude of coal resources available in particular countries. This explains the great importance of coal (and, incidentally, of other solid fuels) for industrial, transport and domestic use.

The cardinal feature of coal as a fuel is its calorific value, contingent, primarily, on the combustion temperature of the organic substance, as well as on the quantity of ballast, that is to say, on the moisture and ash contents, which tend to reduce its calorific value. Since, moreover, the equipment for burning coal is greatly diversified, it is important to be informed, in order to ensure rational fuel use, about certain other properties of coal.

The following features determine, in a varying degree, the suitability of coal for power purposes: a) volatile matter content, b) caking property, c) combustion temperature and calorific value, d) ash content, e) moisture content, f) sulphur content, g) flammability and combustibility, h) ash fusion temperature, i) behaviour during storage, j) spontaneity of ignition, k) hardness, l) size.

The first two are basic prerequisites for classing coal according to type, while the calorific value serves to divide the younger varieties of coal (31 and 32) into sub-types. The allocation of coal to individual classes is contingent on the classification of coal according to types and on the ash content; granulation of

COAL PREPARATION AND UTILISATION

COAL PREPARATION AND CLEANING

- Grading (Sizing)
- Dedusting
- Size Reduction (Crushing, Grinding)
- Blending (Blends for Carbonisation)
- Cleaning (Hand-picking, Washing, Dry Cleaning, Flotation)
- Drying
- Briquetting

UTILISATION OF COAL (CHEMICAL PROCESSES)

Combustion	Gasification (Gas Producers)	Low-temperature Carbonisation	The Gas Industry	The Coke Industry	Extraction	Hydrogenation
Heat	Producer Tar	Low-temperature Coke	Domestic Coke	Metallurgical Coke	Bitumens	Motor Spirit
Steam	Producer Gas	Low-temperature Tar	Coal Tar	Coke-oven Tar	Waxes	Gas Oils
	Water Gas	Motor Spirit	Crude Benzole	Crude Benzole	Resins	Fuel Oils
	Synthesis Gas	Low-temperature Gas	Ammoniacal Liquor	Sulphate of Ammonia		Wax
			Town-gas	Coke-oven Gas		Lubricating Oils

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coal is provided for in a special classification of coal according to size. The remaining features of power coal are of major or minor importance, and provision can be made for them in individual contracts or acceptance specifications.

Combustion technique has at its disposal numerous types of furnaces and installations which make possible the rational combustion of the most diversified kinds of fuel. It lacks, however, a universal type of furnace which would enable the burning of every kind of fuel with a similar degree of thermal and economic effect. Certain of the installations in use are, as is generally known, suitable for coals with a large volatile matter content, others — for coals with a small volatile matter content; one type of furnace may be more suitable for non-caking coal, the other — for caking coal; again, one type of furnace may require screened coal, and the other will burn smalls or pulverised coal only. Hence the tendency among power engineers to select fuel with definite properties and most suitable for any particular type of furnace.

Complete gasification of coal

Complete gasification is one of the chemical methods of improving solid fuels and is intended to:

a) convert solid fuels (coal, semi-coke, coke) into the more valuable and convenient form of gaseous fuel;

b) produce gas required for further chemical processing (gas for synthesis);

c) concurrently obtain from coal, valuable by-products (such as primary tar).

The process of complete gasification of coal results in the transformation of a solid into a gaseous fuel. Four methods of gasifying coal are, in principle, being used in actual practice, viz.:

1) using air blast for the gasification of coal, a method which yields producer gas of a calorific value of approximately 1100 kcal/Nm³;

2) using mixed air-steam blast as a gasification agent, the most commonly practiced method of obtaining mixed gas of a calorific value of approx. 1800 kcal/Nm³;

3) intermittent gasification which is carried out by the alternating use of air and steam and which generates water gas of a calorific value of 2500—2900 kcal/Nm³;

4) gasification of solid fuel under pressure (20—40 Ats) by means of oxygen and steam as gasifying agents, which yields gas of a high calorific value (4000—4500 kcal/Nm³).

Blast furnace gas, having a comparatively low calorific value of approx. 900 kcal/Nm³, may also be considered as a kind of producer gas.

The final composition of gas and the calorific value of gas obtained in producers are, to a great extent, contingent on the properties of the raw fuel (volatile matter, ash and water content, etc.) and on the method of procedure.

The following are the characteristics of solid fuels used for gasification processes:

1) low ash content (5—12%);

2) low sulphur content (approx. 1%);

3) lack of caking faculties, or low caking index;

4) limited size range;

5) high degree of mechanical strength;

6) high ash fusion and melting temperature.

Fuels at variance with the technical specification quoted can also be used for producer-gas manufacture, but the use of improper fuel and, above all, incidental carelessness in attending to producers, leads to a reduction of output, or to disturbances in operation.

The varying methods of gasification and the diversity in producer types impose different claims on fuels. Thus, for instance, as in the case of open-hearth furnaces, coal should have a high volatile matter content (above 30%); in another case — coke will prove to be the correct producer fuel.

It must be emphasised that although the quantity of coal used for the manufacture of producer gas amounts, in individual countries, from merely a fraction of the country's coal consumption, the gasification process plays an increasingly important role in power economy. It must be realised that this process is of immense importance for the metallurgical industry, glass works, gas works and other major consumers of producer gas and, also, becomes increasingly vital for the chemical industry in the production of gas for synthesis, as well as, using producers working with oxygen under pressure, for town gas production.

Low-temperature carbonisation

Low-temperature carbonisation is a process of carbonising coa in temperatures of approximately 500°—600° C.

It is, in fact, a process of thermal decomposition of coal similar to that used in the production of coke, the only essential difference being in that it takes place at lower temperatures and in a different type of equipment.

The most important effect of low temperature carbonisation is a higher yield of tar than is the case in coke-oven and gas plants. This tar is generally described as low-temperature tar. The chemical composition of the tar is rather of an aliphatic nature, whereas gas tar and coke-oven tar contain mainly cyclic compounds (aromatic).

Semi-coke, the residual product of low-temperature carbonisation, contains a higher percentage of volatile matter than gas coke. Semi-coke also has a higher reactivity than coke and is, in so far as combustion properties are concerned, an intermediate link between coal and coke.

Low-temperature carbonisation of lignite on an industrial scale (Rolle) began towards the end of the early part of the past century. The incentive for the development of this industry was the increasing demand for mineral oils for lighting purposes.

Low-temperature carbonisation of bituminous coal did not, however, develop until after the First World War. Ovens similar to those customary in the gas industry, were originally used for low-temperature carbonisation of bituminous coal, but subsequently a number of ovens, varying in design, became available. The need for an easily combustible and smokeless solid fuel accounted for the development in the production of semi-coke from bituminous coal. It was actually in the United Kingdom that, in spite of considerable technical difficulties, this industry originated — in a country where local conditions, such as shortage of firewood, the traditional fireplace and the perpetual fog nuisance in big cities, were factors conducive to the development of production of semi-coke, or "coalite".

The reason for the development of the low-temperature carbonisation industry in other countries (e. g. Germany) was the considerable demand for liquid fuels, the lack of which made itself acutely felt in Germany during the First World War. Nowadays — the question of obtaining liquid synthetic fuels from bituminous and brown coals has assumed the status of a world problem.

The lower ranks of coal (types 31—33) will, if put through the process of low-temperature carbonisation, yield from 6% to 20% of tar. Low-temperature carbonisation of coal yields, further, semi-coke — an excellent smokeless solid fuel.

Semi-coke burns, under normal conditions, without emitting soot or smoke, the percentage of volatile matter being sufficient to ensure efficient combustion. Semi-coke is, thus, a domestic fuel with a high thermal effect. It can also be used to replace coke for central heating purposes. Semi-coke can, moreover, be used, provided that it has sufficient mechanical strength, as a substitute for coke for industrial use.

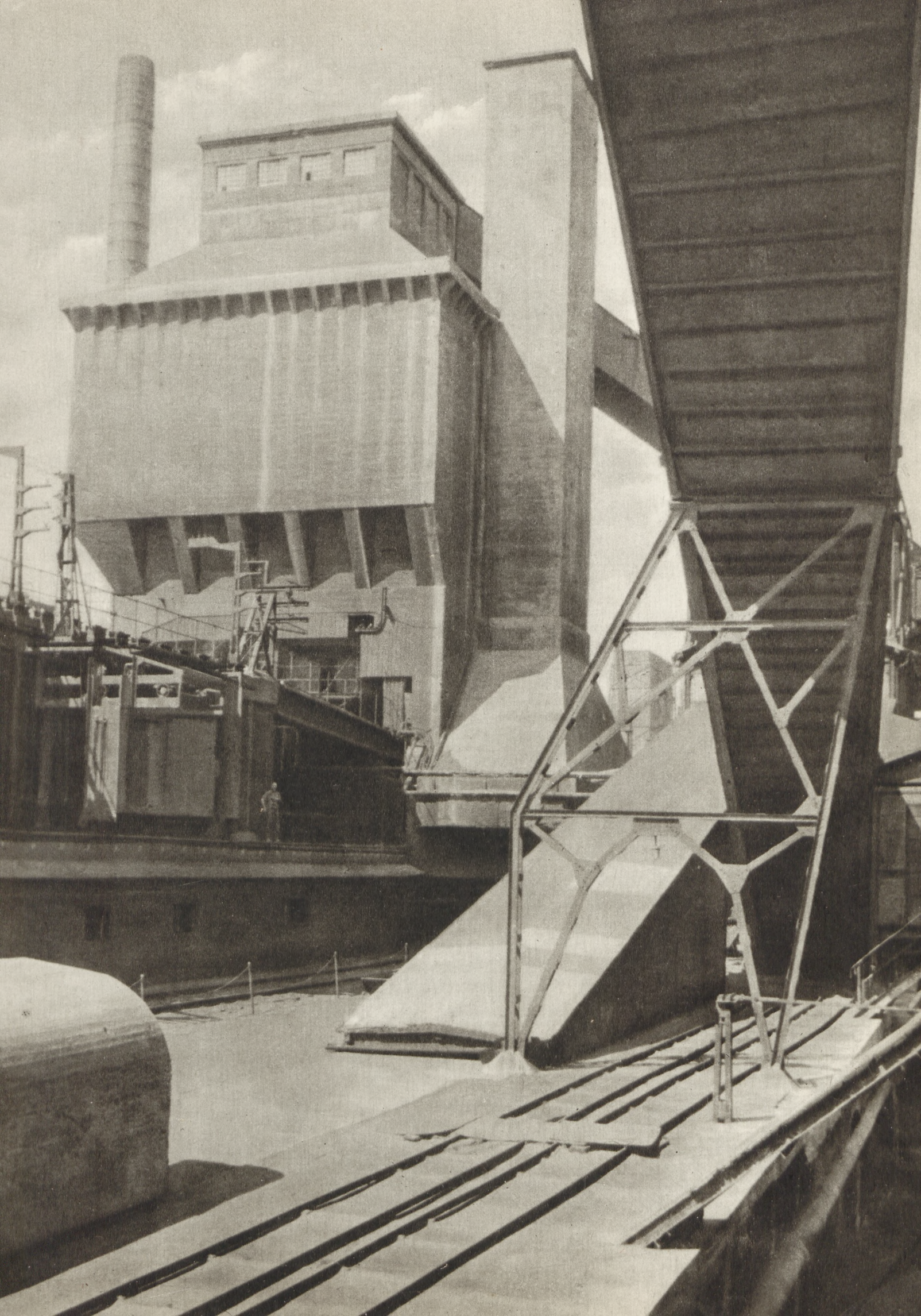
The procedure of low-temperature carbonisation can be adjusted according to whether it is intended to obtain the maximum quantity of tar, or to produce high-grade semi-coke.

The production of hard semi-coke is contingent on the grade of fuel and on the oven system used.

Low temperature carbonisation, intended to yield the highest possible quantity of tar, requires special conditions in so far as the rate of heating is concerned.

It is essential, as a condition for obtaining a high yield of tar, to lead it off as quickly as possible, so as to avoid cracking of the tar. The introduction of gases or steam, or the use of a vacuum in order to accelerate the process of leading-off the tar, have a conservative influence and result in a higher yield of tar.

A coke oven plant



Ovens for low-temperature carbonisation are, from the point of view of their heating system, classed in two groups: a) indirectly heated, diaphragm ovens (e.g. "Coalite" system) and b) ovens heated direct by means of recirculated gases (e.g. Lurgi system).

The diversity of types of ovens used for low-temperature carbonisation accounts for the vastly differing requirements with which the fuels are required to comply.

All kinds of solid fuel, such as wood, peat, lignite and the lower rank of bituminous coal (31—33) are, generally speaking, suitable for low-temperature carbonisation.

What is required of bituminous coals intended for low-temperature carbonisation is that they should have a high volatile matter content and a high yield of tar. It is preferable, in the case of indirectly heated ovens, for the coal to have a higher caking faculty, whereas in the case of ovens heated direct (by means of recirculated gases) a non-caking coal or one with a low caking index should be used.

The Coke Oven and Gas Industries
(high-temperature carbonisation)

High-temperature carbonisation of coal has hitherto been the most important method of processing bituminous coal. World production figures for coke amount to approximately 220 million tons p.a., approx. 60 million tons of which are provided by the gas industry and approx. 160 million by the coke-oven industry. This figure corresponds to a quantity of approx. 300 million tons of coal being processed per annum — and most valuable coal at that. Both industries occupy key positions: the coke-oven industry — as a producer of metallurgical coke (for blast furnace and foundry use), the gas industry — as a public utility industry, supplying the population and the industries with gas — a most valuable carrier of thermal energy. Both industries, moreover, provide valuable tar and benzole products, as well as ammonium sulphate, for the chemical and other industries.

With more than 150 years of development behind them, each of tnese industries is able to avail itself of the experience of, and advances made by the other. In view of the fact that both these industries are relying on an identical technological process (carbonisation of coal in high temperatures of approx. 1000° C), the difference in production equipment has almost entirely vanished; thus, for instance, a number of large gas works have adopted the the horizontal type of coke oven for gas manufacture. There is also little difference now in the range of their products. Coke oven gas is continuing, after coke, to assume an increasing importance in the coke industry as a means of ensuring the remunerability of the enterprise. The gas industry, on the other hand, is becoming increasingly appreciative of the economic importance of coke.

The coke-oven and gas industries produce the following: coke, gas, tar, crude benzole and sulphate of ammonia (or ammoniacal liquor, as the case may be). Certain enterprises are, moreover, equipped for the production of phenol from ammoniacal liquor and of sulphur from gas.

Both industries use, as raw material, coals with the highest caking properties, because only coal of this type will yield coke in the large ovens now used by the gas and coke industries. There can be no coke from coals which have not this property. But in the production of metallurgical coke with a high mechanical strength, such as is obtained in the standard type of coke ovens, the coal is required to possess yet another important quality — swelling pressure

In order, therefore, to obtain coke of a high mechanical strength, the coke industry uses gas coking coals, ortho-coking and meta-coking coals, with an admixture of contiguous types.

If any coke oven plant does not happen to have a sufficient quantity of ortho- or meta-coking coal at its disposal, it can use the lower ranks of gaseous coking coal (34) and gas coal (33), supplemented by ortho-coking coals; however, the usual system of charging coal must, in such case, be replaced by a system of stamping the coal into blocks before charging it into the oven.

The type of plant most frequently used by the gas industry in the production of gas consists of vertical continuous ovens in which the coal is charged at the top end and directed downwards during the carbonisation process. The intumescence of coal would, otherwise, lead to complications during discharging operations. It is for this reason that the gas industry is mainly using coking gas coals. The mechanical strength of coke is of lesser importance for the gas industry than it is for the coke industry, whereas a high output of gas is a paramount consideration. Poland has large resources of excellent gas coals.

Extraction

Extraction, a process in which solvents act on the coal substance, can only prove of industrial significance if the yield of substance extracted is sufficiently high and the extract product itself is of industrial value.

Raw materials suitable for extraction on an industrial scale consist of such coals as yield, in the pressureless extraction process, not less than 8% of extract, assessed on dry coal, free from ashes. For this reason, the industry uses, primarily, lignite which yields an average of 8—20% of extract (a bituminous wax, also called montan wax) and, in certain cases, as much as 40—80% (in the case of pyropissite). The use of peat yielding, according to quality, an average of 4—20% of bitumen, estimated on the dry substance, is also an economically warranted proposition.

Quality of the extraction product is another important factor. Bitumens consist of waxes and resins. Because waxes are the more valuable component, the higher the wax content in the bitumens in a given coal variety, the more suitable is this coal as a raw material for extraction.

Extraction applied to bituminous coals is, while playing an important role in the chemistry of coal as one of the methods of testing its chemical structure, still without major industrial significance.

Hydrogenation

The problem of obtaining liquid from solid fuels is increasing in importance, as a result of the vast development of motorisation throughout the world; and the more so, because the resources of the mineral oil deposits are not likely to last for long. It is for this reason that industrial plants are in operation in numerous countries to produce synthetic liquid fuels by the hydrogenation method or synthesis, while, concurrently, scientific research is in progress on a large scale.

Lack of space prevents us from dealing with the problem of obtaining liquid fuels from suitably prepared industrial gases — water gas, coke-oven gas, etc. — by the Fischer-Tropsch method. All solid fuels and the products of their chemical processing are suitable raw materials for hydrogenation, though, in practice, this process is confined to the hydrogenation of lignite, high-grade oil-shales, flame coals (1) and gas flame coals (32), as well as to coal derivatives, such as pitch, tar, extraction products, lubricating oils finding no sale in the market, and other coal derivatives.

Raw materials for hydrogenation should contain a minimum of mineral substance and water and must be carefully ground. The ground coal is, in the presence of a catalyst, mixed with oil to the consistency of a paste containing 40—50% coal, and is then treated with hydrogen at a temperature of approx. 450° C and at 250—700 atm. pressure (pressure depends on the type of solid fuel used for hydrogenation).

The less the fixed carbon content and the higher the hydrogen content in the fuel, the more readily does it yield to hydrogenation; a high oxygen content results in more hydrogen being consumed in the hydrogenation process.

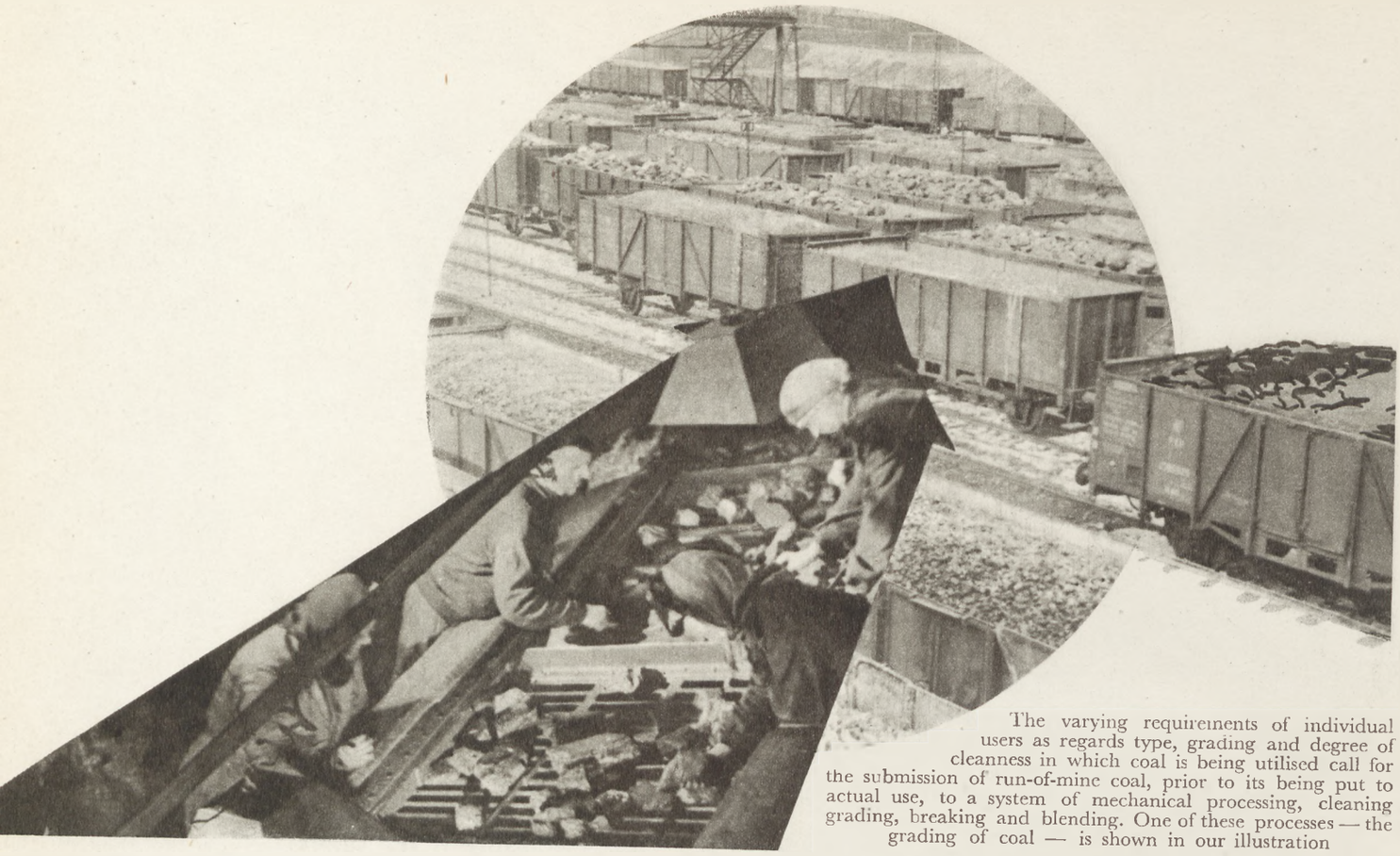
Lignite and young bituminous coals are the fuels mainly used for hydrogenation.

The hydrogenation industry is proceeding, in view of the hydrogen content in bituminous products and the satisfactory yield from hydrogenating them, together with the excess of tar products with a high boiling point, towards the hydrogenation of bituminous and brown coals and their derivatives, as well as of oil-shales, but mainly of the tar they yield in carbonisation.

The main object of hydrogenation is to obtain motor spirit and Diesel oils, paraffin oil, lubricants and fuel oils.

There is here presented, in a very condensed form, a review of the more important methods of utilising coal, both as a power source and as a raw chemical material for gasification, low-temperature distillation, hydrogenation, as well as for the production of coke and gas.

Discharging coke



The varying requirements of individual users as regards type, grading and degree of cleanness in which coal is being utilised call for the submission of run-of-mine coal, prior to its being put to actual use, to a system of mechanical processing, cleaning grading, breaking and blending. One of these processes — the grading of coal — is shown in our illustration

Let us now, before concluding this article, deal with the properties of coal available in Poland.

Polish coal and its properties

Coal mined in Poland includes all varieties, there being a particular abundance of types 31 to 34, that is to say the full gamut ranging from flame to ortho-coking coals. The choice is, in fact, so wide that there is a type of coal to meet every individual and specific purpose.

Large quantities of Polish coals are consumed daily, both at home and abroad, for industrial and domestic fuel purposes, as well as for railway engines. The properties of Polish power coals are proverbial and are greatly valued. The main features of Polish fuel coals, by comparison with coals emanating from other coalfields, are high calorific value, excellent combustion properties, low ash and exceptionally low sulphur content. Another valuable attribute of Polish bituminous and gas coals is their high mechanical strength — a factor of paramount importance in carriage and handling, since it means that the percentage of coal disintegrating during transport is infinitesimal. Polish coals are, both during storage and transport by land or sea, entirely safe from spontaneous ignition. This has been proved through many years of experience, as well as by special scientific investigation, as, for instance, by a study of the behaviour of Polish coal during sea transport through the tropics (en route for Pakistan and the Argentine).

Poland has available, moreover, large resources of coal suitable for various methods of chemical processing, in particular for gasification in producers of all types and for high and low temperature carbonisation.

The range available includes coals having from the highest down to the lowest agglutinability index. Thus, there are high caking coals for the production of coke and low caking or non-caking coals for use in gas producers and for low temperature carbonisation processes using ovens heated by recirculated gases.

Polish gas coals and coals suitable for both gas and coke production possess the following features: high caking property, high gas yield — up to 380 m^3 per ton of coal, and a high yield of tar — from 3.6% to 4.1%, easily obtainable in coke oven plants, and up to 5.5% in gas plants.

Coals used for low-temperature carbonisation yield as much as 10% – 16% of tar, determined on dry substance, free from ashes. Low sulphur content is, because it tends to reduce the cost of purifying the gas, another notable feature of Polish coals used in the gas and coke oven industries. Moreover, coke obtained from these coals has a low sulphur content — a most valuable feature in metallurgical, producer and fuel coke.

Poland has available, as will be seen from the above characteristics, not only high-grade power coals, but also a wide range of types suitable for all other purposes, particularly for gas producers, low temperature carbonisation, coke oven and gas plants.

Prof. Dr. B. Roga

Coal mined in Poland includes the full gamut ranging from flame to ortho-coking coals. The choice is, in fact, so wide that there is a type of coal to meet every individual and specific purpose. Our illustration shows a part view of a Polish gas works

THE IRON FOUNDING INDUSTRY IN POLAND

General

The story of the development of iron founding on a major scale in Poland goes back to the end of the 17th century. The first large blast furnace was built in the 1680's, and iron founding, based from that time on blast furnace pig iron, gained, early in the 18th century, a firm foothold on its path of advancement.

Now that Polish industries are in the process of expanding their potential, and large new metallurgical works with the most up-to-date equipment are being put into operation, a number of old foundries which have been in existence since the beginning of the 19th century are also being extended and their plant modernised.

The Polish foundry industry produces iron castings of every variety, such as water and drainage pipes, with the requisite specials, miscellaneous machine and commercial castings, heavy water supply valves and fittings, as well as enamelled goods, such as sanitary ware, baths etc.

Malleable castings include fittings, steel pipes, chains, etc.

Poland has for many years been exporting cast-iron goods to numerous countries in Europe and overseas. These goods come up to world quality standards, have an established reputation and command a ready sale in importing countries.

The development of the export of iron castings is to some extent handicapped by the heavy home demand caused by the extensive plan of reconstruction and rehabilitation of Polish industries, cities and settlements.

Water supply pipes

Water supply pipes include socket and flanged pipes, as well as pipes with flexible joints, with rubber washers. These are made in a range of sizes, from 40 mm ($1^1/_2$ in.) to 1200 mm (48 in.) dia. Specials of all kinds and sizes to suit these pipes are also available.

Pipes of from 80 mm (3 in.) to 400 mm (16 in.) dia., to international standards (corresponding to B. S. S. 1211—1945, or D. I. N. 2431), are cast by the centrifugal process (in steel moulds). Pipes of other sizes and types are made by the vertical process, the moulding and casting operations being fully mechanised.

These latter are, in principle, made to Polish (NP) or German (VDI 1882) standard specifications, but can, in the case of larger orders, be made to any standard specified by the customer. Polish foundries are about to introduce international standards in the manufacture of water supply pipes.

Socket pipes are made in the following lengths:

diameters 40 and 50 mm ($1^1/_2$ and 2 in.)	—	2.5 m (8 ft.)
,, 80 mm (3 in.)	—	3 m (9 ft.)
,, 100 mm (4 in.)	—	4 m (12 ft.)
,, 125 mm (5 in.) and over	—	5 m (16 ft.)

The centrifugal process of casting pipes in steel moulds has, as is generally known, the tendency to improve the quality of cast-iron, added to which there is the obvious advantage of speed in production,

the need for sand moulds and cores being eliminated. Centrifugally cast pipes have to pass through a long process of annealing, which imparts to cast iron the correct crystalline structure, free from internal stresses.

Every pipe is, on completion, submitted to a hydraulic test. Pipes cast by the vertical process are tested for a pressure of 20 Ats., and pipes cast by the centrifugal process — of 30 Ats. Pipes cast by the centrifugal process will withstand a pressure considerably in excess of 100 Ats.

Samples of cast-iron from each melt are tested for tensile strength and bending, in accordance with standard specifications. Test specimens and works' certificates of hydraulic and tensile tests, with chemical analysis, can be supplied at customers' request.

The pipes are, after the hydraulic test, coated inside and out with hot bitumen.

The spigot ends of the pipes are, prior to despatch, protected with strands of wood-wool.

Flanged pipes can, according to customers' instructions, be supplied ready for assembly, that is to say with the flanges machined and with holes drilled.

Pipe specials are also tested for a pressure of 20 Ats., except in the case of certain profiles of larger diameter, intended for work at lower pressures. They can, also, at customers' request, be made with thicker walls, or of high-duty cast iron, for a test pressure of 20 Ats. and above.

Such specials have recently been supplied for a large feed main of the Istanbul water works.

Orders for substantial quantities of water supply pipes are also being received from countries of People's Democracy, Scandinavia, the Middle and Far East.

Drainage Pipes

Polish foundries supply the following types of drainage pipes and specials: S.K.T.F. (Swedish), ON (Norwegian) and Palestinian, as well as types LD, NA and LNA used in certain countries in Europe and overseas.

Considerable quantities of pipes of these types, with a complete range of specials, are always held in stock, so as to enable us to deal promptly with rush orders.

Drainage pipes and specials are, as in the case of water pipes, coated inside and out with hot bitumen,

»METALEXPORT«

NATIONAL ENTERPRISE

MOKOTOWSKA 49, WARSAW

P.O.BOX 442 • TELEGRAMS: METALEX-WARSAW • TELEPHONES: 74960 AND 74980

EXPORT LIST:

FACTORY EQUIPMENT AND STEEL CONSTRUCTIONS

Mining plant and equipment • Sugar works plant and equipment • Paper mill plant and equipment • Building contractor's machinery • Cranes, hoists, elevators • Steel constructions and bridges • Power shears for metals • Pneumatic hammers • Power presses • Bakery ovens and plant • Machinery for the meat-processing industry • Stone breakers and mills • Rolling mill rolls • Standard and narrow gauge points and turnouts.

ROLLING STOCK

Standard, broad and narrow gauge rolling stock • Railway equipment and spares

MISCELLANEOUS MACHINERY, PRECISION AND OPTICAL INSTRUMENTS

Metal and wood-working machinery • Mounted rolling stock axle lathes • Textile machinery for spinning and weaving mills, card clothing, shuttles, etc. • Agricultural machinery and implements; spares • Flour milling machinery • Tools (saws, chucks, vices, drills, grinders, etc.) • Abrasive paper • Measuring instruments (water meters, pressure gauges, dial indicators, etc.) • Clocks • Steel cylinders • Optical glass • Optical instruments.

CASTINGS

Miscellaneous machine and commercial castings • Cast iron water pipes, bends elbows, tees, etc. • Ingot iron pipes, bends, elbows, tees, etc. • Cast iron enamelled sanitary ware • Ductile cast iron unions.

IRON MANUFACTURES

Black annealed steel, bright, barbed and galvanised wire • Galvanised wire netting • Wire and clou nails, wood screws, cotter pins • Horseshoe nails • Farmer's chains • Black tools • Scythes, spades, hammers, pickaxes, shovels.

ENAMEL- AND GALVANISED WARE AND MISCELLANEOUS GOODS

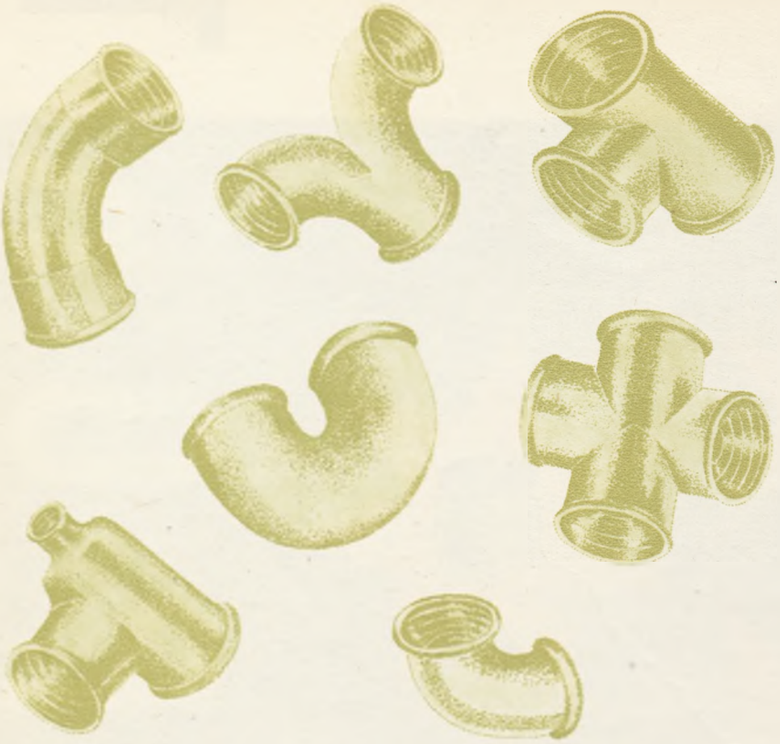
Enamelled household hollow-ware • Galvanised ware: buckets, tubs, etc. • Hurricane lanterns, japanned and galvanised • Cutlery.

ENGINE-DRIVEN FIRE PUMPS, BICYCLES AND SPARES, ELECTRICAL EQUIPMENT AND MATERIALS

Three-phase asynchronous squirrel cage motors, from 0.2 to 100 HP • Three-phase asynchronous slip-ring motors from 1.1 to 110 HP • Three-phase oil-transformers from 20 to 1600 kVA, up to 30 kV • Buchholtz relays: type B1 up to 1000 kVA, type B2 up to 10000 kVA • Electric measuring instruments: ammeters, voltmeters, etc. • Supply meters • Time switches for staircase lighting • Power cables, paper insulated, for up to 35 kV tension • Telecommunication cables • Joint boxes • High tension switchgear • Miscellaneous material for surface and buried mounting: rotary and lever switches, lampholders, plug sockets, fuse boxes, conduit tubes, etc. Miniature lamps for flash lamps, etc. • Flash lamps for all purposes • MB type telephone exchanges, hand operated, for local battery.

METALEXPORT

Biblioteka Uczelni Morskiej w Gdyni
SOPOT



Water supply pipes are made to Polish standards, but can, in the case of larger orders, be made to any standard specified by the customer. Our illustration shows: large pipes in stock

but can, should the client desire, be supplied without bituminous coating — a practice which must necessarily be followed in the case of shipments to tropical countries.

Fittings (of malleable cast iron, for steel pipes)

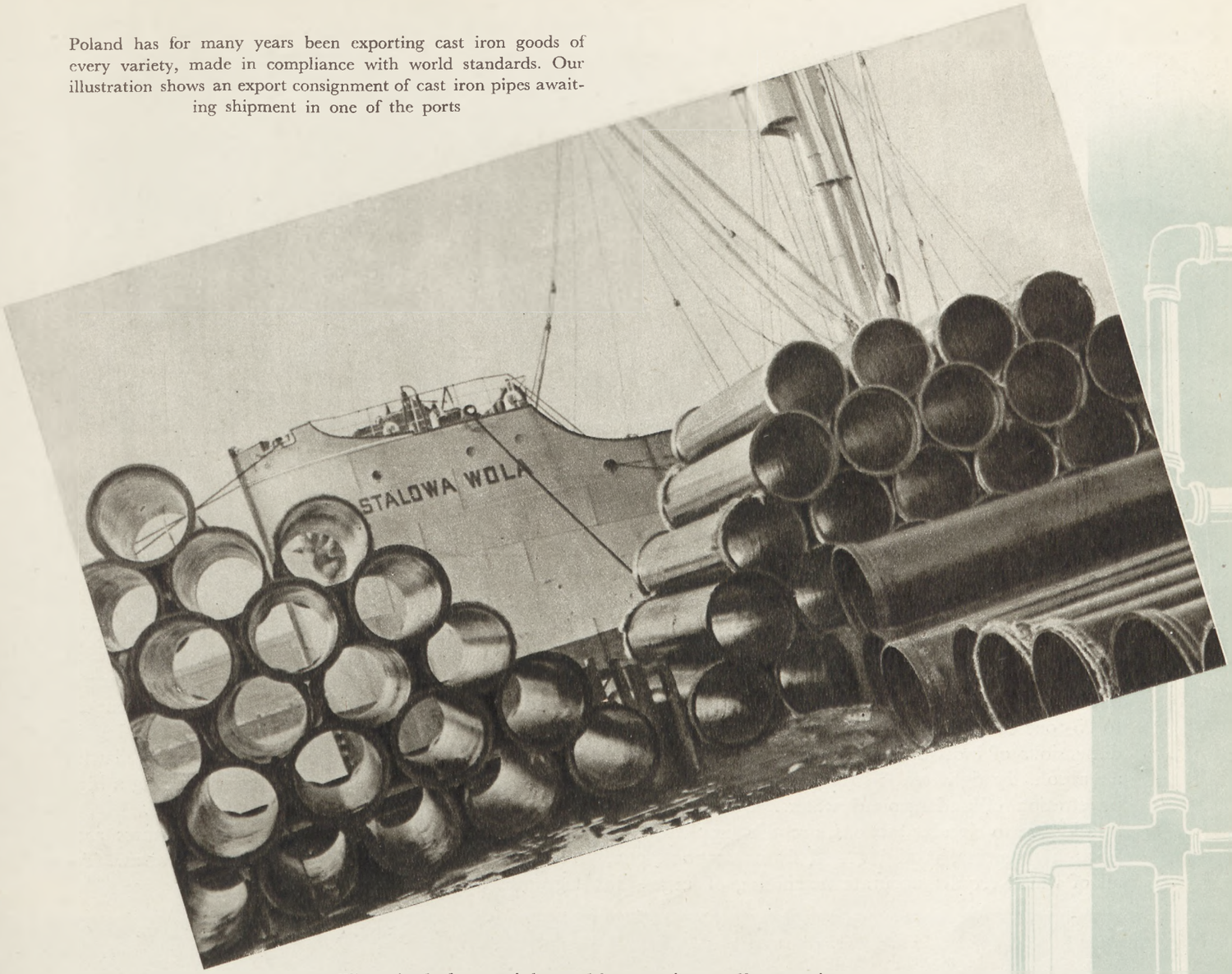
Polish-made fittings are supplied, in addition to the countries specified above, to countries of Latin America and to South Africa. They comply, in so far as dimensions, shapes, quality of material, kind of thread and resistance to hydraulic pressure and bending are concerned, with international standard requirements.

Fittings are, according to customers' instructions, supplied either black or galvanised. They are dispatched in standardised seaworthy wooden cases each weighing approximately 100 kg gross.

Castings

All types of castings are produced by Polish foundries, in a wide range of weights (running into tons).

Poland has for many years been exporting cast iron goods of every variety, made in compliance with world standards. Our illustration shows an export consignment of cast iron pipes awaiting shipment in one of the ports



They include special machine castings, alloy castings for special purposes (rolling mill rolls, rolls for the paper industry, machine castings, etc.), as well as plain commercial castings, such as gulley gratings and manhole boxes, etc.

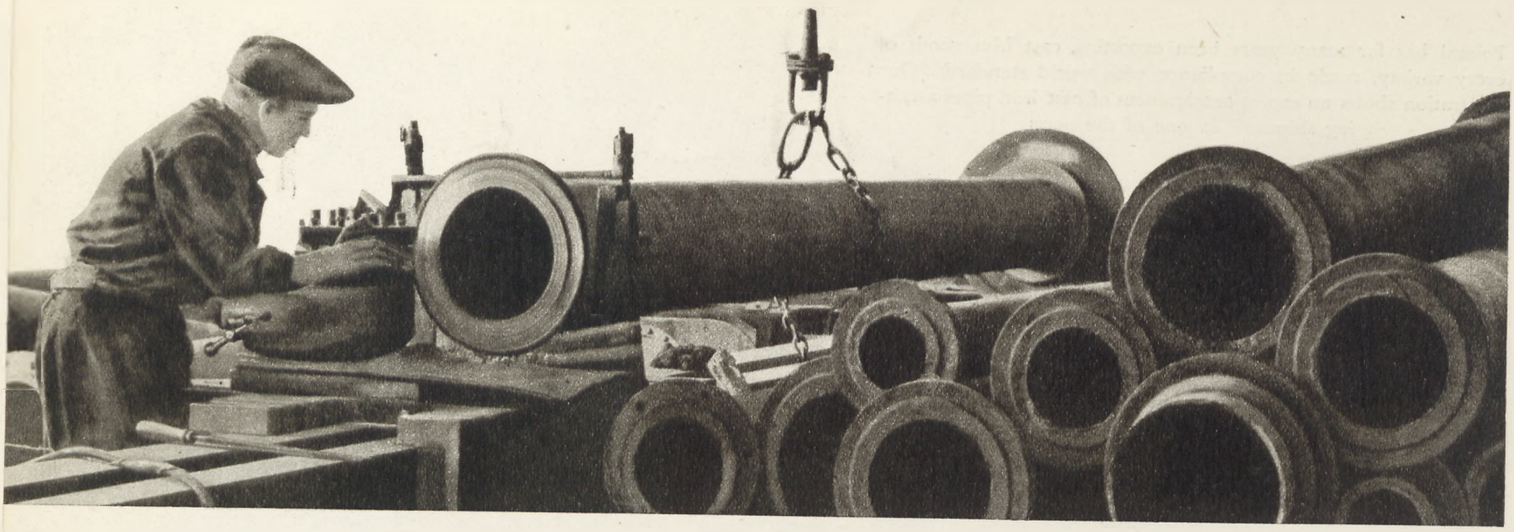
Sanitary ware

Polish enamelled cast iron sanitary goods and baths have been an export item for many years and have earned appreciation and established their reputation in Scandinavian countries, Belgium and the Middle East (Turkey, Lebanon, Egypt). The quality of these goods is such as to enable them successfully to compete with those of leading manufacturers.

Sanitary ware, other than that listed in our catalogues, can be supplied to special order, according to types current in individual countries, as for instance, in the Middle East.

Casing sections for underground tunnels

This item holds the most prominent position in the export of Polish cast iron manufactures. The Polish



Machining the flanges on pipes

industry has successfully mastered the complicated manufacturing process of casing sections of this type which requires, in addition to foundry experience, considerable skill in machining.

Great care is necessary in the production of goods of this class, which consist of circular sections with an outside diameter of up to 9.5 metres, weighing up to 25 tons each, and call for precision finishing of the dimensions of individual segments in order to ensure an absolutely tight seal in the tunnel to prevent the penetration of underground waters. Other elements, in addition to circular sections, are also supplied, such as arch segments, retaining and frame sections, etc., all of which require accurate machining of large side surfaces. This is done on special large milling and planing machines, the holes being drilled on multiple spindle drills.

The high technical qualifications required in precision finish and machining, together with strict analytical requirements, as well as the considerable output (some tens of thousands of tons), have prompted production to be centralised in works specialising in the manufacture of casing sections and equipped with suitable plant and machine tools, thus ensuring a high standard of the goods and prompt deliveries.

The sole exporters of cast iron manufactures are: "METALEXPORT", Mokotowska 49, Warsaw. Telegrams: METALEX — WARSAW.

The Polish foundry industry also produces casing sections for underground tunnels. Casing sections, in view of their large diameter, running up to 9.5 metres and weighing up to 25 tons, call for special precision finishing of their dimensions in order to ensure a perfect seal in the tunnel

TYPE 1-0-0 DIAL INDICATORS

Rapid progress in industrial methods since the war, the necessity of mastering new production processes and the problem of interchangeability of machine parts have together been instrumental in much greater stress being laid on the accuracy of measurement and technical control.

Manufacturers are becoming increasingly aware of the fact that indicator instruments, or clock gauges as they are called, hitherto used exclusively for laboratory purposes, have now come into much wider use, not only in major works — as a direct accessory to production cycles and in test shops, but even in minor work and repair shops.

This indicator, mounted in suitable holders or on a stand, is a most versatile instrument for measuring out-of-roundness of cylinders, eccentricity of shafts, accuracy of machined surfaces, alignment of sliding parts, depth of holes, cavities, diameters, gauge of machined parts, in checking various materials, such as leather, glass, plastics, fabrics, metal sheets, in checking the accuracy of machining in gear wheels and for a number of other purposes arising almost daily in works and workshops.

Clock gauges for measuring gear wheels are widely used in the watch-making trade and in precision instrument manufacture.

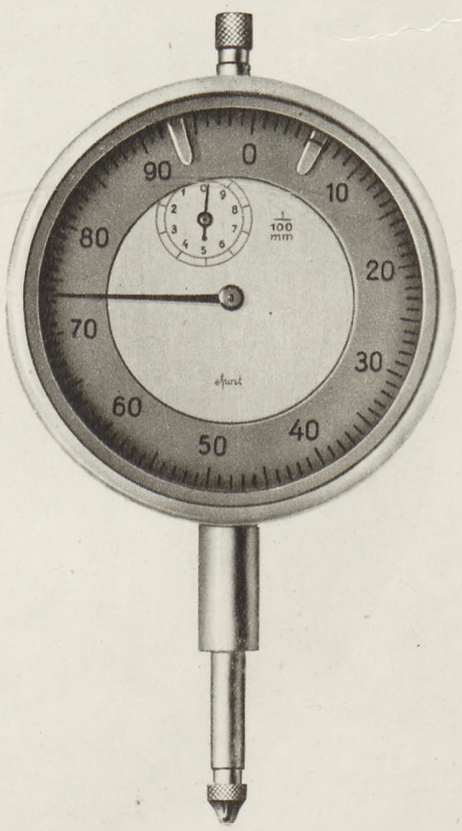
Clock gauges are of particular importance in the checking of mass-production goods. Speed and accuracy of measurement cause them to boost up production and to reduce manufacturing costs by eliminating a whole range, hitherto in use, of plug and jaw chuck gauges.

There is no getting away from the fact that these instruments fully meet all requirements expected of measuring appliances of this class.

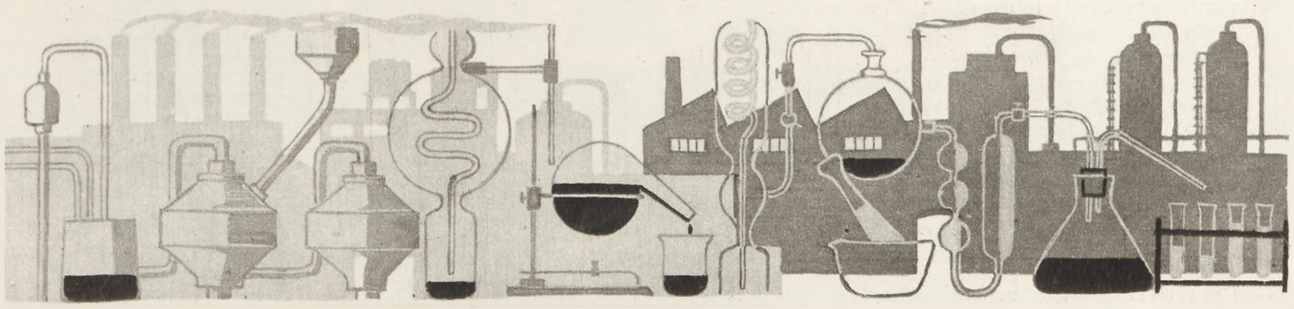
Salient features of dial indicators

a) High grade material and skilled workmanship, ensuring accuracy of measurement and long life.
b) Rapid indication of tolerances and accuracy of machining.
c) Tolerance pointers can be easily set to any required position.
d) Simplicity of setting the dial to zero by means of a milled ring.
e) Requires no skilled operator for handling.
f) Spindle lifting device enables quick measurement in mass-production work.
g) Simple exchangeability of tips, to suit the nature of measurements, saves measurement or checking time.

Enquiries should be addressed to "METAL-EXPORT", Mokotowska 49, Warsaw. Telegrams: Metalex - Warsaw.



Dial gauges, formerly used exclusively in laboratories, have now come into general use in industries and trades. Our illustration shows a dial gauge of Polish manufacture



CHEMICAL SEMI-PRODUCTS

Articles which have appeared in previous issues of this magazine have dealt with the more important chemicals exported by "CIECH" Ltd., General Import and Export Agency for Chemicals, Warsaw.

The present article constitutes a concise review of chemical semi-products, with reference to the range of their application in the individual industries.

Chemicals for the Dyestuff Industry

Acetone – used in the production of indigo, nigrosines, azo and diphenylamine dyes.

Ammonium Hydroxide – used in the production of aniline and azo dyes.

Aniline – the main constituent of aniline black and aniline dyes.

Arsenic – as a medium for consolidating the colour of aniline dyes.

Benzene – basis for benzene derivatives (nitrobenzene, chlorobenzene).

Benzidine – important intermediate for Congo and diamino dyes.

Chromic Acid – oxidising agent in the production of semi-products.

G-acid – intermediate for azo dyes.

Acetic acid – intermediate for miscellaneous dyestuffs and semi-products.

H-acid – intermediate for miscellaneous dyes.

Naphthalene – important raw material for derivatives used in the manufacture of dyestuffs.

Phenylo-betanaphthylamine – raw material for derivatives used in the manufacture of dyestuffs.

Nitric acid – used in the manufacture of alizarin dyestuffs and miscellaneous semi-products.

Nitrobenzene – yields aniline and is used in the manufacture of m-group semi-products.

Resorcin – used in the manufacture of the alizarin, monoasonium and resorcin group of dyestuffs.

R-acid – used in the manufacture of azo-dyestuffs for wool.

Salicylic acid – used in the manufacture of dyestuffs.

Sulphanilic acid – used in preparing β-Naphthol and β-Naphthylamine.

Sodium Sulphide – used in the manufacture of sulphide dyes.

The above semi-products are the basis for a number of dyestuffs having varying properties and of various shades. Naphthalene, from which some 50 different types of dyes are made, may serve as an example.

Chemicals for the Paint and Varnish Industry

Chemicals exported by "CIECH" for the above industry include:

Acetone – a solvent used in the manufacture of nitrocellulose lacquers.

Butyl alcohol – used as a solvent.

Methyl alcohol – used as a solvent.

Potassium Sulphate – used as a component for pigments.

Ammonium Sulphate – used as a component for pigments.

Sodium Sulphate – used as a component for pigments.

Antichlor (Sodium Thiosulphate) – used in the manufacture of fluorescent paints.

Arsenic – used in the manufacture of green colour mineral and organic paints.

Sodium Nitrite – used in the manufacture of ceramic paints.

Sodium Bichromate – used in the manufacture of chrome paints.

Potassium Bichromate – used in the manufacture of yellow colour paints.

Calcium Chloride – used in the manufacture of fireproof paints.

Carbon Disulphide – used as a paint remover.

White Lead – used as a pigment for oil and dry paints (red-lead).

Zinc oxide – used as a permanent pigment to form a base in the manufacture of oil and dry paints.

Colophony – used in the manufacture of oil and alcohol paints.

Bone Glue – used as a base in the manufacture of paints, varnishes and pigments.

Acetic acid – used in the manufacture of aircraft lacquers.

Turpentine – used in the manufacture of polishes, paints and lacquers.

Zinc Sulphate – used in the manufacture of fireproof paints and pigments.

Chemicals for the Rubber Industry

The rubber industry, based on natural or synthetic raw rubber, requires a number of chemicals for the manufacture of rubber goods, and even the raw product itself — latex absorbs substantial quantities of chemicals for coagulation and preservation. The more important chemicals used in the rubber industry include:

Ammonium Hydroxide – a medium used to prevent the coagulation of latex.
Aniline – used as an accelerator.
Sodium nitrite – used in the coagulation process, to produce soft rubber.
Calcium Chloride – used as a coagulating agent.
Carbon disulphide – used as a solvent.
Zinc Oxide – used as a filler in the manufacture of a number of rubber goods (mainly tyres and belting).
Lithopone – used for weighting rubber..
Formaldehyde – used as an accelerator to increase the velocity of vulcanisation, as an accessory medium retarding coagulation and as a medium preventing coagulation of latex.
Glycerine – used to maintain elasticity in rubber.

Bone Glue – as a medium preventing coagulation; also used in the production of special qualities of fat-resisting rubbers and as a stabiliser.
Formic Acid – used in coagulation and regeneration processes and in the production of synthetic rubber.
Acetic Acid – used as a coagulating medium.
Zinc Sulphate – used in the production of dental rubber.
Caustic Soda – used for the regeneration of raw rubber and as a medium in coagulation.
Vulcacites D and M – used as accelerators.

Chemicals for the Wood and Paper Industries

Chemicals supplied by "CIECH" for the purposes of these two industries include:
Methyl Alcohol – used as a solvent for nitrocellulose.
Potassium Sulphate, Ammonium Sulphate, Chrome Sulphate, Sodium Sulphate } fireproof impregnating media.
Potassium Sulphate – used for sizing and dressing paper substance.
Anilin – used as a paper preservative.
Antichlor (Sodium Thiosulphate) – used for bleaching and as a fixative.
Arsenic – used as a wood preservative.
Zinc Chloride – used as a preservative for railway sleepers, for mercerising paper and in the manufacture of grease-proof paper.
Calcium Chloride – used as a filler in paper manufacture.
Zinc Oxide – used in the manufacture of sateened and wall-papers.
Sodium Bichromate – oxidising and bleaching agent.
Formaldehyde – used in the production of water- and grease-proof papers and of wall-paper.
"Carbolina" – a proprietary brand of impregnating medium (for railway sleepers and telegraph poles).
Bone Glue – used as a size and adhesive.
Zinc Sulphate – used as a bleaching medium for paper and as a wood preservative.
Aluminium Sulphate – used in the manufacture of newsprint, packing paper and writing bond.
Caustic Soda – used in the production of wood pulp.

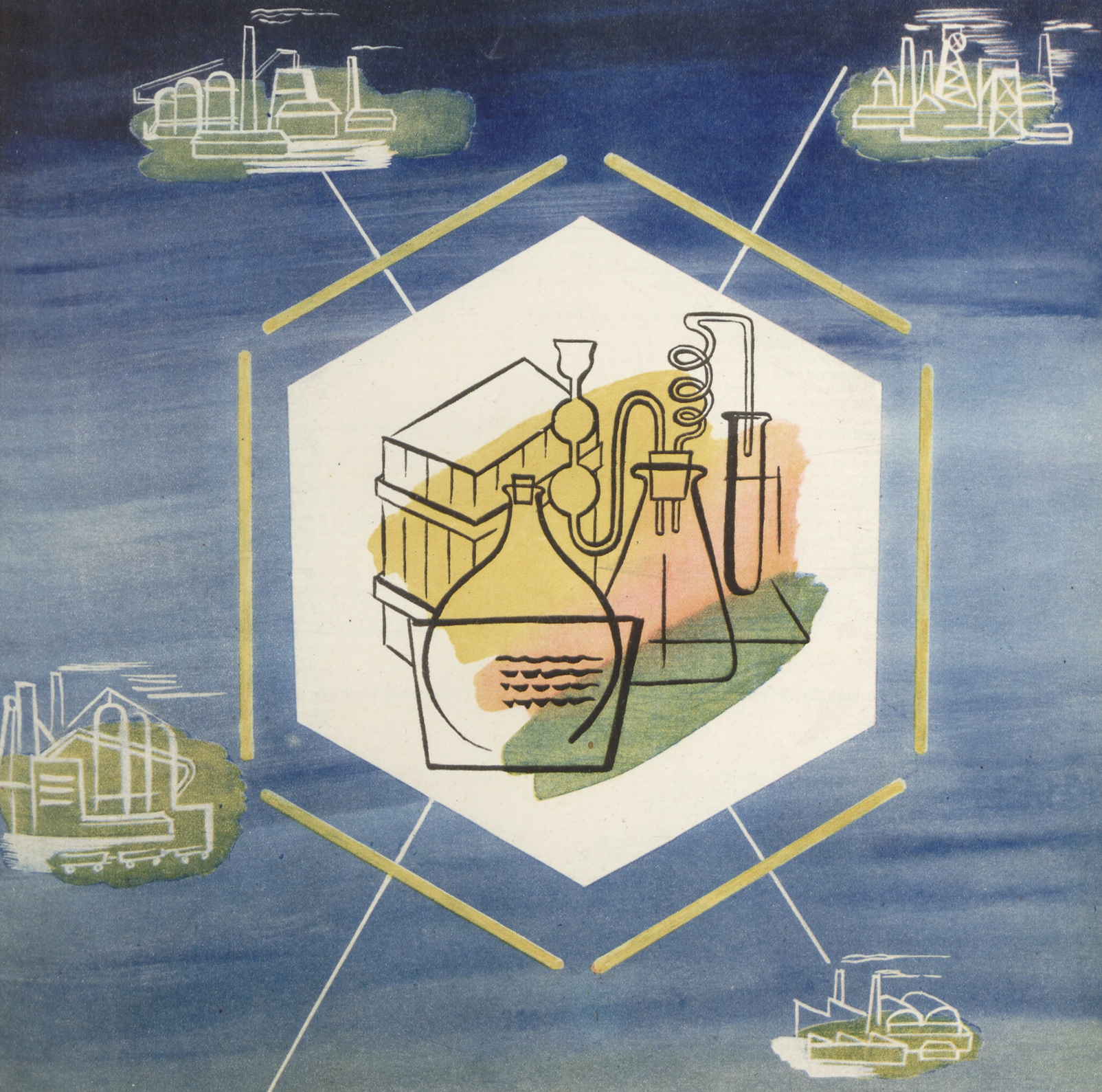
Chemicals for the Tanning and Leather Industries

Hides are the basic raw material for these industries. The grades of the leather produced are contingent on the quality of the hides, the method of tanning and the quality of chemicals used in the processing. The principal chemicals exported by "CIECH" for tanning and leather dyeing comprise:
Methyl Alcohol – used for dyeing.
Potassium Sulphate, Ammonium Sulphate, Chrome Sulphate, Sodium Sulphate } used for white tanning of hides, as components of other tanning mediums and in the dyeing process.
Ammonium Hydroxide – used as a disinfectant.
Antichlor (Sodium Thiosulphate) – used as a reducing agent for bichromates in the Schultz method of chrome leather manufacture.
Arsenic – used for the tanning of pelts and for the preservation of hides.
Dyestuffs – for leather dyeing, in a variety of colours.
Benzene – used as a solvent.
Potassium Bichromate – used for chrome tanning.
Sodium Bichromate – used for chrome tanning.
Formaldehyde – used as a component of tanning extracts, for hardening, and in the manufacture of waterproof leather.
Bone Glue – used for adding to leather dyes and as an adhesive.
Chromic acid – used in tanning and dyeing.
Formic acid – used in tanning, as a preservative and for de-liming.
Acetic acid – used for the production of chromium acetate.
Oxalic acid – used for bleaching and as a disinfectant.
Naphthalene – used as a preservative and in the manufacture of tanning materials.
Ammonium Chloride – used in tanning.
Zinc Sulphate – used as a leather preservative.
Aluminium Sulphate – used as a component of tanning materials for white leather.
Sodium Sulphite – bleaching agent and preservative.
Soda Ash – used in the finishing process of tanning.
Caustic Soda – used as a tanning material.

Chemicals for the Pharmaceutical Industry

The Polish pharmaceutical industry, though comparatively young, produces a range of important drugs. The list given below includes only those chemicals for the use of the pharmaceutical industry which are being exported by "CIECH".

Ciech



CHEMICAL SEMI-PRODUCTS

EXPORTED BY

»CIECH«

NATIONAL ENTERPRISE
(INDEPENDENT LIABILITY)

GENERAL IMPORT AND EXPORT AGENCY FOR CHEMICALS

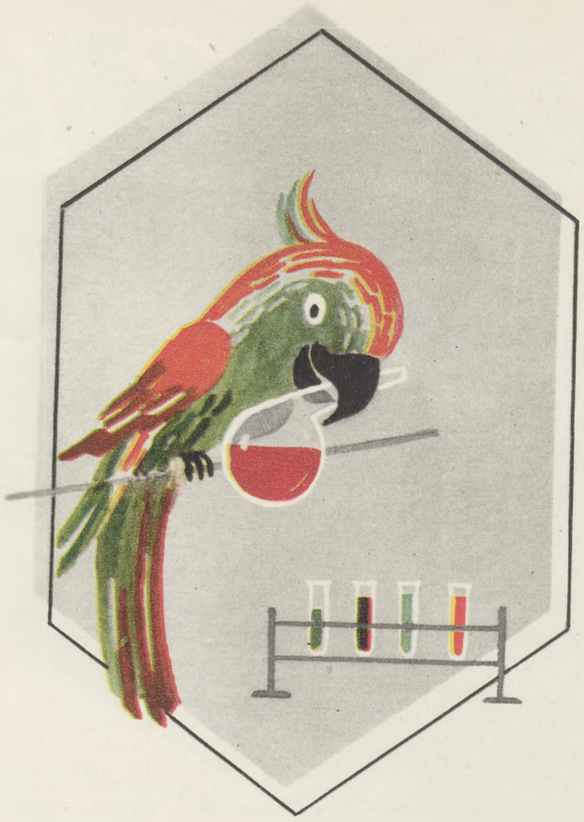
JASNA 10, WARSAW

Butyl alcohol – used as a solvent.
Zinc Oxide (pharmaceutical) – used in the manufacture of face creams, tooth powders and pastes.
Sulphates – used as astringents.
Ammonium Hydroxide – used in the production of ammonium drugs.
Antichlor (Sodium Thiosulphate) – used in the production of cyanides.
Arsenic – used in the manufacture of remedies and preparations (Novarsolen, Salvarsan, Acetarsol).
Chloroform – used as an anaesthetic.
Glycerine – used both as a solvent and in its pure state.
Acetic acid – used in the manufacture of aspirin, phenacetin, Antipyrine, etc.
Methylium Salicylicum – used in the manufacture of anti-rheumatic ointments.
Activated carbon – absorbent.
Bicarbonate of Soda – used for purifying.

Chemicals for the Textile Industry

This industry depends on fibres of both vegetable and animal origin, as well as on synthetic filaments. These fibres and filaments or the fabric must, before they are finally ready for use, pass through a certain chemical process. This again calls for a whole series of chemicals of which the more important, exported by "CIECH", are:

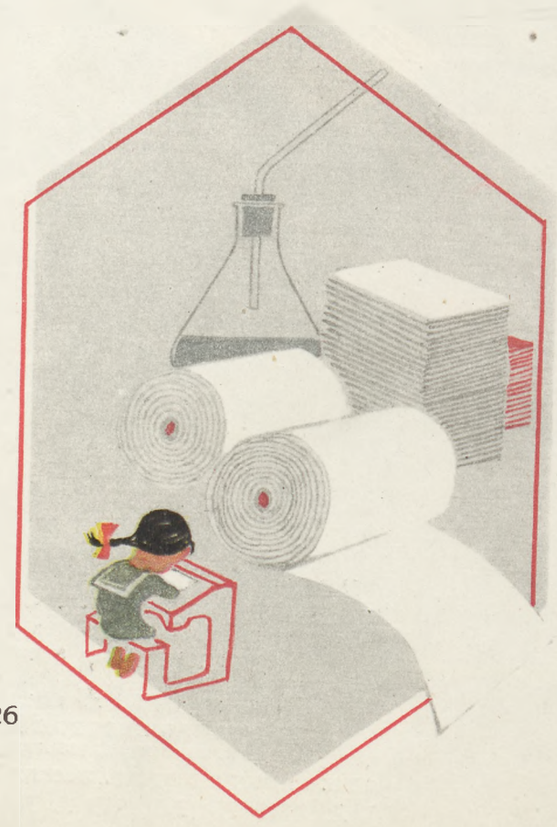
Chrome Sulphate – used in the manufacture of fireproof fabrics.
Ammonium Hydroxide – used in bleaching, printing and dyeing, as well as in preparing fireproof fabrics.
Aniline – used in printing and dyeing and as a preservative.
Antichlor (Sodium Thiosulphate) – used in bleaching, printing and dyeing processes, as well as for fixing Paris Green.
Potassium Arsenate – used in the printing of fabrics.
Arsenic – used for fixing aniline.
Sodium Nitrite – used for bleaching linen, hemp and silk fabrics and as a developer.
Sodium Bichromate – used for printing and in the manufacture of waterproof fabrics.
Potassium Bichromate – used in printing processes.
Zinc Chloride – used for mercerising cotton, and as a mordant.
Calcium Chloride – used in the manufacture of fireproof fabrics and as a filler.
Carbon Disulphide – used in the manufacture of synthetic filaments.
Zinc Oxide – used in printing processes.
Formaldehyde – used for bleaching and as a filler.
Sodium Hydrosulphite – used for bleaching and in printing processes.



Chemicals for the dyestuffs industry

Bone Glue – used in the finishing process of fabrics.
Glycerine – used for bleaching, in printing and dyeing, as a solvent for dyes.
Formic acid – used as a mordant in printing and dyeing.
Acetic acid – used for impregnating and as a solvent in dyeing and printing.
Oxalic acid – used for bleaching.
Caustic Potash – used for mercerising cotton.
Ammonium Chloride – used in the printing of fabrics.
Zinc Sulphate – used as a mordant in printing.
Aluminium Sulphate – used as a mordant in printing.

Chemicals for the paper and wood industries



Chemicals for the tanning and leather industries

Chemicals for the paint and varnish industry

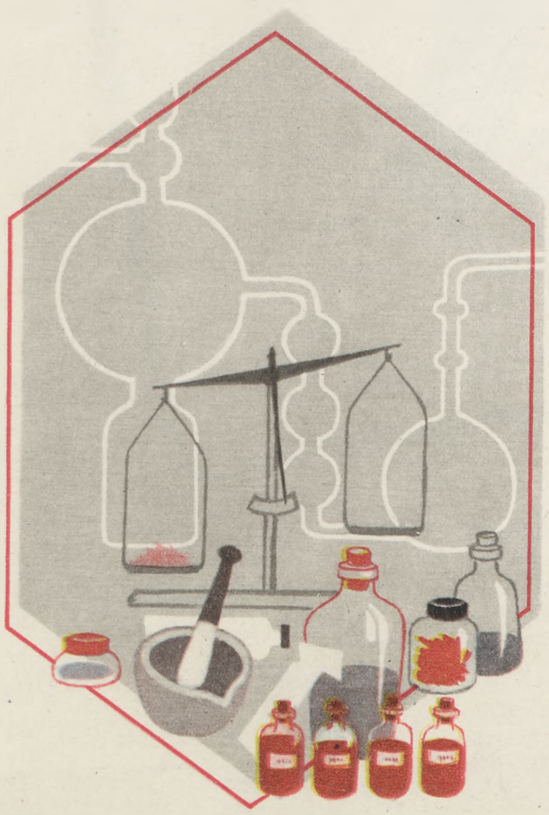
Chemicals for the rubber industry

Sodium Sulphite – used in printing processes.
Soda Ash – used in the manufacture of cellulose and derivatives, for bleaching, in dyeing and printing and as a water softener.
Caustic Soda – used for mercerising wool, in the manufacture of cellulose, as a bleaching medium, as a cleaner and preservative.

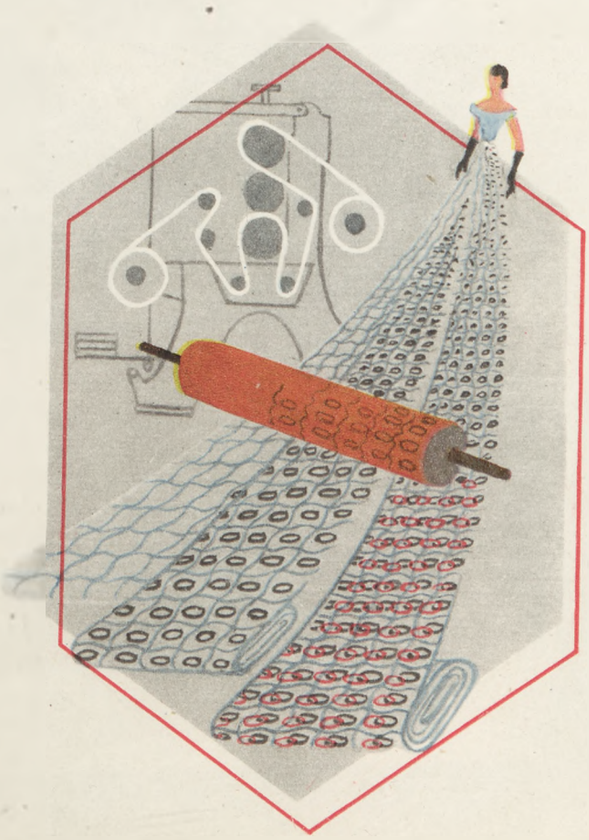
Reference has here been made only to a few of the more important industries using chemical semi-products exported by "CIECH" General Import and Export Agency for Chemicals (Jasna 10, Warsaw). A comprehensive catalogue of export chemicals will shortly be available and will inform customers concerning the full range of products manufactured by the Polish Chemical industry.

One of the future issues of this magazine will deal at some length with chemical semi-products used in the food processing, electrical, match, glass and blast furnace industries.

Chemicals for the pharmaceutical industry



Chemicals for the textile industry



Minex

GLASS CONTAINERS

EXPORTED BY

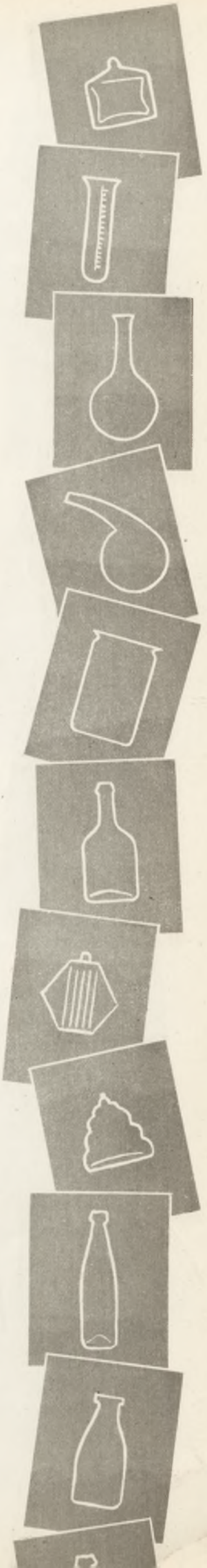
»MINEX«

NATIONAL ENTERPRISE
(INDEPENDENT LIABILITY)

EXPORTERS AND IMPORTERS
OF MINERALS AND MINERAL PRODUCTS

KREDYTOWA 4, WARSAW

THE EXPORT OF GLASS PACKINGS



Beer bottles head the list of glass containers exported from Poland. They enjoy, as is proved by the steady demand and persistent requests to increase the monthly export quotas, a high reputation in European markets.

Polish beer bottles owe this success not merely to the quality of raw material, but particularly to their perfect finish. Production is fully automatic and, although it is of a mass character, all the conditions governing mechanical, chemical and thermal resistance are being scrupulously observed. Polish standards applicable to the home market are, in order to meet the exacting requirements of foreign customers, frequently being exceeded. This flexibility of Polish glass works is particularly appreciated by breweries exporting their beer overseas.

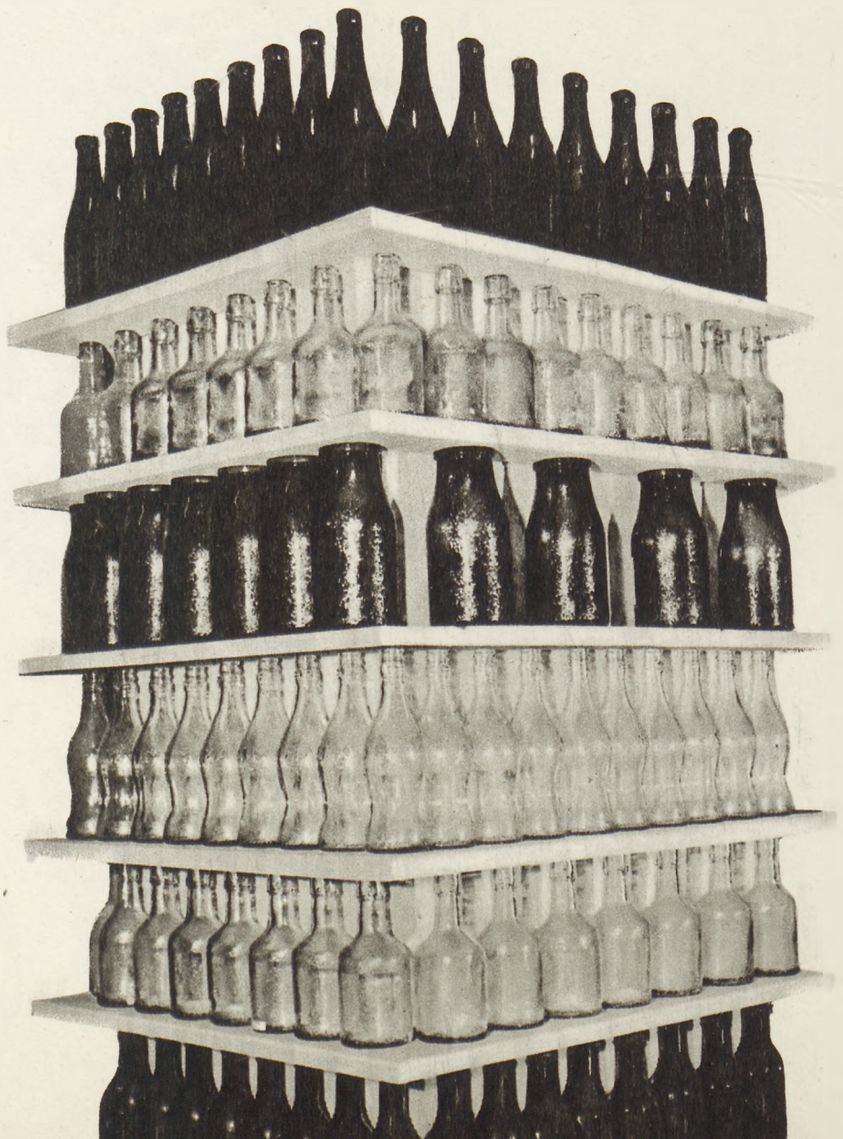
Carboys for acid are another typical item exported from Poland. It has, after careful consideration and in view of the favourable opinion expressed by customers, been decided to continue to rely on the manual process of manufacture, since this is superior to mechanical production methods.

Pharmaceutical glass was being exported, primarily to Switzerland, for many years prior to the Second World War. The number of countries to which pharmaceutical glass is now exported steadily increases.

Polish demijohns and pharmaceutical jars hardly require special recommendation — they are, on account of their uniform orange colour, resistant to alkaline solutions, impenetrable to light and inaccessible to air, thus preventing the latter from having an oxidising effect on the contents. Certain quantities are, in spite of the increased home market demand which absorbs the major part of the production, still available for export.

Reference must also be made to the extensive range of bottles and jars for fruit and vegetable preserves, honey, jam, pickles etc. These jars are hand-made, semi-automatically or fully automatically, of semi-transparent, greenish or fully transparent glass, the natural colour of the contents being clearly visible. A number of novel and ingenious devices have, in addition to the familiar Weck type hermetic sealing system, been invented and patented. The extremely practical and unexcelled type of jar with bakelite screw top or with bayonet type lid continues to represent a substantial item among the goods made by Polish glass works.

There are, moreover, other items, in addition to the aforesaid standard manufactures, available for export, such as accumulator boxes, inkstands, perfume bottles, syphons etc. The export of goods specified above is in the hands of "Minex", Exporters and Importers of Minerals, Cement, Glass and Ceramics, Kredytowa 4, Warsaw. Telegrams: Minex–Warszawa.



Bottles are the main item among glass containers exported by Poland

POLISH RURAL HANDICRAFTS – POTTERY

Pottery holds a prominent position among Polish rural handicrafts concerned with form and ornamentation.

Clay as a raw material — now compact and in harmony with the principles of potting, now capricious — can be made to assume one shape or another, and the form is the natural outcome of these properties. Ornamentation, at the same time, is closely associated with form.

This accounts for the extreme diversity, both in form and design, so remote from the monotony of factory-made ware, of rural pottery.

The village potter procures his raw material in the immediate neighbourhood. This raw material sometimes reveals quite peculiar properties, but the rural craftsman knows exactly how to use them to advantage. He has the knack of imparting to his work a bold, yet dignified and sometimes even delicate touch. The ingenuity of the folk art of ornamentation is extensive and reveals a high artistic level.

Rural pottery consists, in principle, of utility and ornamental ware. The illustrations above show typical specimens of both these groups of Polish rural pottery

The two fundamentals of ornamentation — the principle of contrasts and the principle of colour harmony have been fully mastered by the Polish craftsman.

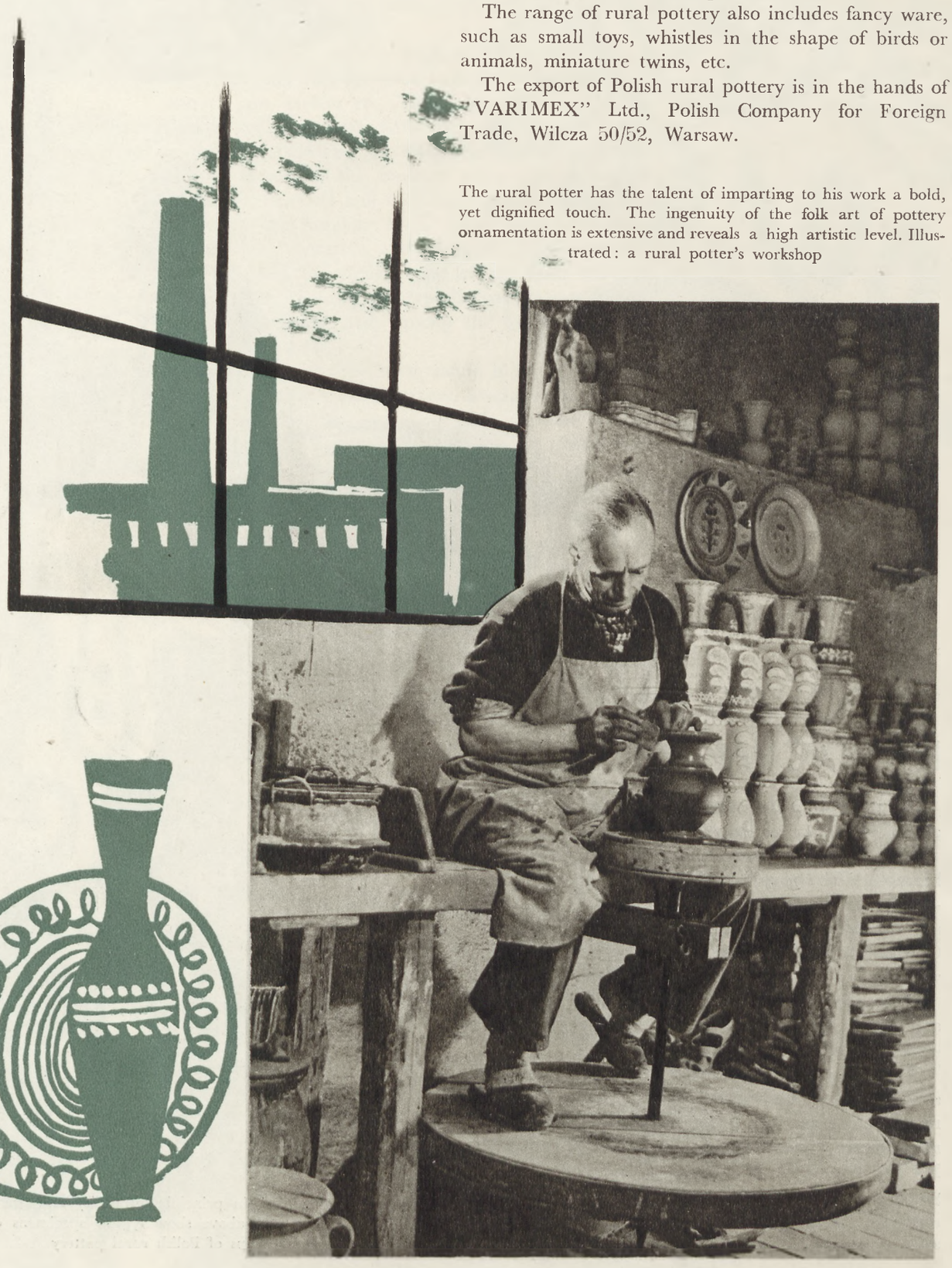
Folk art, unbounded in its ingenuity and so radically different from "fine art", is responsible for a great variety in charming and frequently valuable ceramic ware produced in certain centres in Poland.

Pottery consists, in principle, of utility and decorative ware. The former includes articles of daily use, such as wine and cocktail sets, ash-trays, small vases, jugs, cake trays, etc., the latter — ornamental bowls, vases, jugs and plates for the decoration of the home and for show-case display, etc.

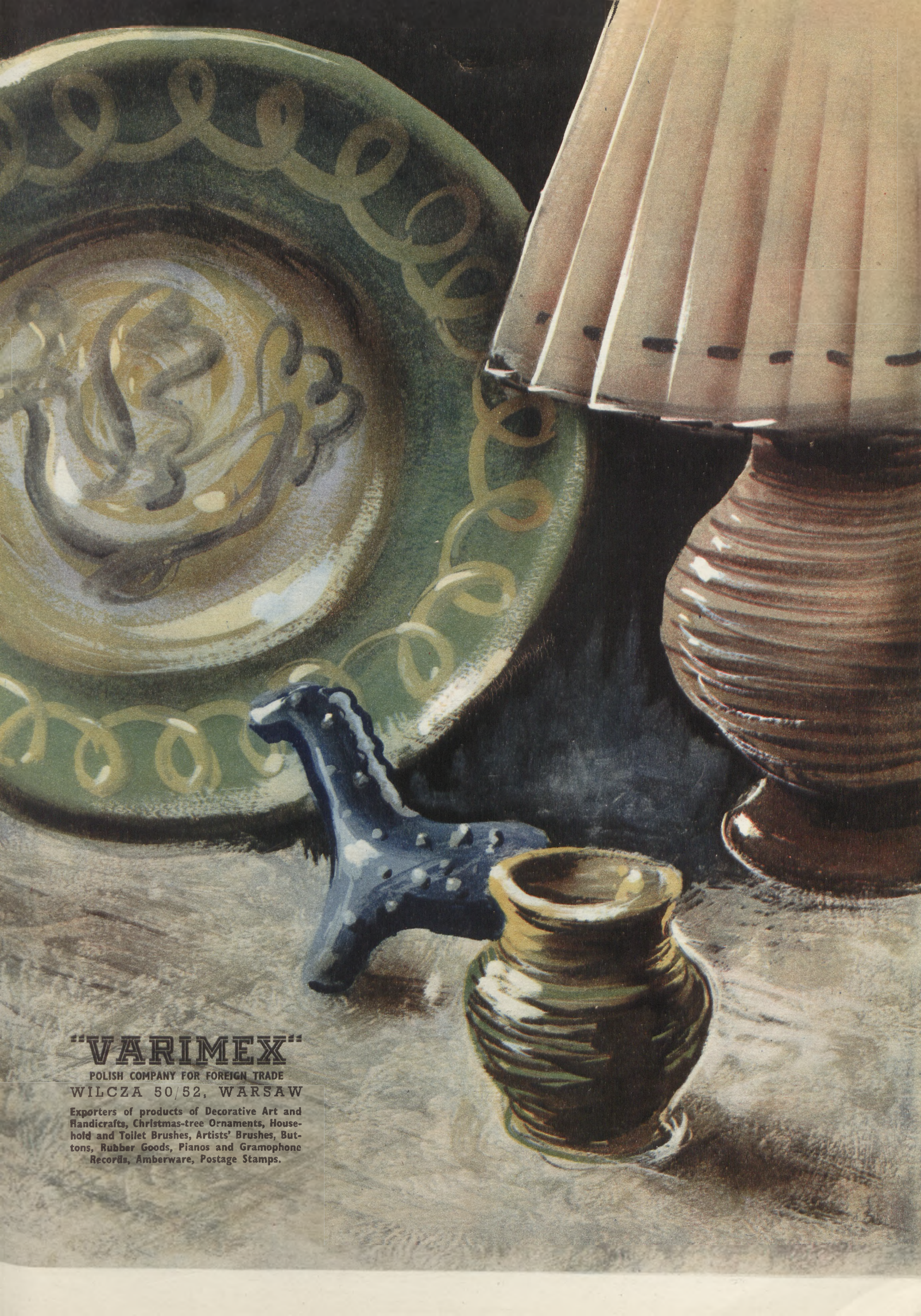
The ornamentation is either mounted in relief, engraved, stencilled or hand-painted.

The range of rural pottery also includes fancy ware, such as small toys, whistles in the shape of birds or animals, miniature twins, etc.

The export of Polish rural pottery is in the hands of "VARIMEX" Ltd., Polish Company for Foreign Trade, Wilcza 50/52, Warsaw.



The rural potter has the talent of imparting to his work a bold, yet dignified touch. The ingenuity of the folk art of pottery ornamentation is extensive and reveals a high artistic level. Illustrated: a rural potter's workshop



"VARIMEX"

POLISH COMPANY FOR FOREIGN TRADE

WILCZA 50/52, WARSAW

Exporters of products of Decorative Art and Handicrafts, Christmas-tree Ornaments, Household and Toilet Brushes, Artists' Brushes, Buttons, Rubber Goods, Pianos and Gramophone Records, Amberware, Postage Stamps.

PAGED

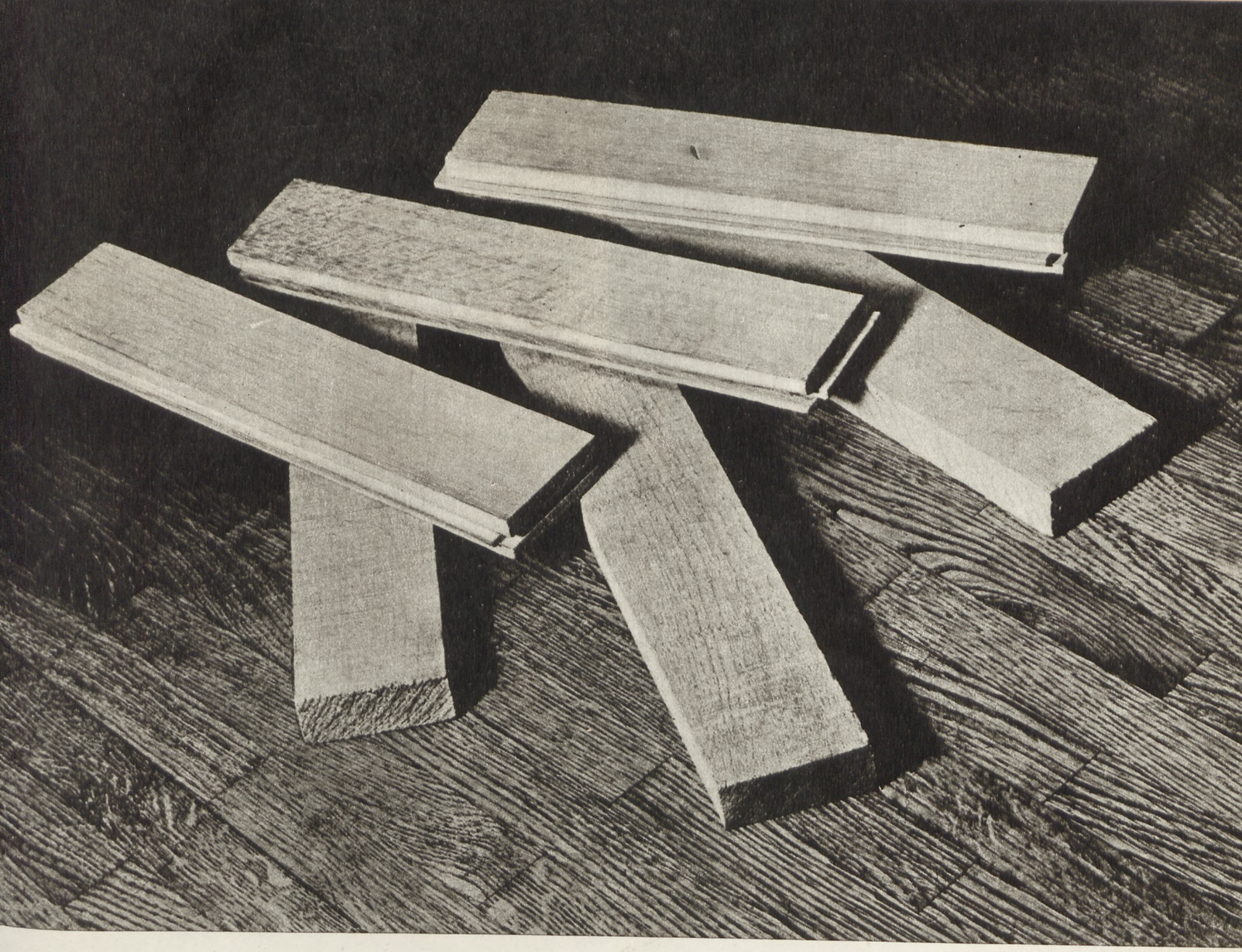
STATE ENTERPRISE
(INDEPENDENT LIABILITY)

PLAC TRZECH KRZYŻY 18, WARSAW
TELEGRAMS: HAZAPAGED-WARSAW

PAGED - are the sole exporters of the following products of the Polish woodworking industry:

Flooring strips, parquetry, plywood • Bentwood furniture: chairs, armchairs, etc. • Cabinet-maker's furniture for home, office, etc. • Packing cases, barrels, barrel staves • Household woodware • Willow and wicker-ware

EXTENSIVE NETWORK OF AGENTS AND DIRECT REPRESENTATIVES IN VARIOUS COUNTRIES



THE EXPORT OF FLOORING STRIPS AND PARQUETRY

Polish flooring strips and parquetry have been renowned for many years in European and overseas markets where they have, owing to the high qualities of Polish timber, met with the appreciation of a wide circle of customers.

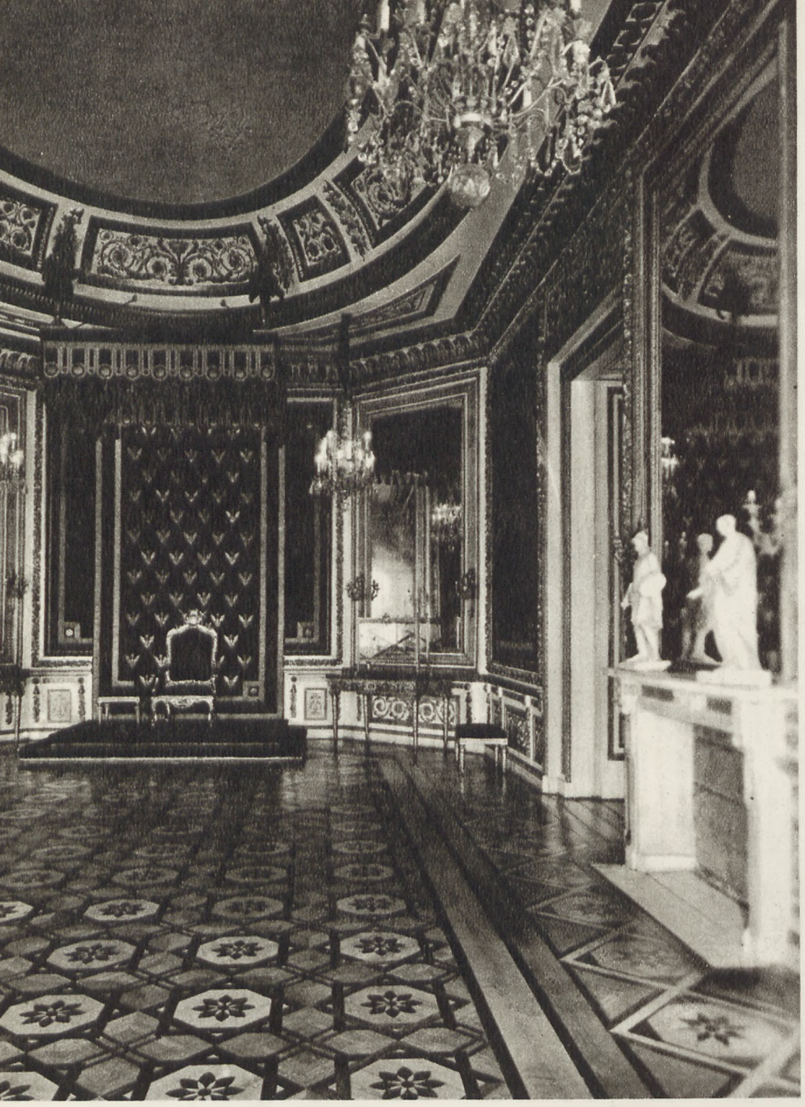
Polish oak (Quercus pedunculata) and beech (Fagus silvatica) used in the manufacture of flooring strips and parquetry form, as a result of favourable climatic conditions and careful mechanical processing, a high-grade material, much valued by the building trade.

Flooring strips are a semi-product used for the manufacture of parquetry. Poland exports both oak and beech flooring strips. These are symmetrically cut, planed on four sides, sound and without core.

Export quality flooring strips, cut to metric, or so-called continental size, are, in general, made in 1st and 2nd quality grades. Overseas markets are also interested in inch-size oak flooring strips. The range of flooring strips available includes short and long strips made to British measures.

The dimensional classification of flooring strips is as follows:

Length: short strips — from 25 to 50 cm, graded every 5 cm
medium strips — from 55 to 95 cm, graded every 5 cm
long strips — from 1 m upwards, graded every 10 cm.



Width: narrow strips — 4 cm
medium width strips — from 5 to 8 cm, graded every 1 cm
broad strips — from 9 to 13 cm, graded every 1 cm.

Thickness: thin strips — 19 mm
standard — 22 mm
thick — 25 mm.

A certain surplus, not taken into consideration when determining the dimensions of flooring strips, is allowed for in production; this amounts to: in width, 2—3 mm, in length — 2 cm or in long strips — 3 cm.

Quality classification is based on imperfections (blemishes) in the structure of the wood. Flooring strips are, according to the extent of imperfections, divided into grades I and II. Grade I includes flooring strips with sharp edges, perfect on three sides, of regular and delicately patterned grain formation, one pearl knot being permissible on the reverse. Grade II includes flooring strips of regular or patterned grain formation with a not too broad tangential design. Single pearl knots up to 6 mm in diameter are permissible on the obverse, while the reverse may contain knots up to 1 cm in diameter. (It is customary to allow, in flooring strips, for the obverse to be of a higher, and the reverse of a lower quality).

Oak flooring strips are, according to the structure of the grain on the plane surface, either lustrous, ornamental or of regular grain formation. Lustrous strips show the cut through the core radii in the form of a lustrous surface. Ornamental flooring strips have the grain cut tangentially. Regular grain strips merely show a straight wood grain.

The Royal Castle of Warsaw, ruthlessly razed to the ground by the Nazi invader, contained magnificent specimens of flooring, famous abroad among historians of art. These parquet floors, which can be seen in our reproductions of some of the rooms of this Castle, constitute an eloquent testimony to the high level of carpentry in the Poland of the past and of the praiseworthy traditions handed down to Poland's present parquet flooring industry

Beech flooring strips have to be specially dealt with, since the anatomic structure of the wood must be taken into consideration. The considerable number of pith cells causes beech to be particularly susceptible to climatic conditions. Beech wood maturing in unsuitable conditions easily generates heat and has thus a tendency to crack — whereby it is disqualified as a raw material for flooring strips. The only way to prevent this from happening is to steam the wood. Steamed beech flooring strips only are exported from Poland.

Flooring strips are sold superficially dry, that is to say with a moisture content of from 15% to 20%. The customer's acceptance is by individual pieces, or on the basis of test batches containing from 5—10% of the total quantity of strips supplied.

The sales unit is one cubic metre. The production of wainscoting is carried out concurrently with the manu-

facture of flooring strips, in lots of 20 lineal metres per cubic metre of the latter.

Parquetry is made from flooring strips by planing them down on four sides in surface and cross planers. Fillets are supplied either with tongue and groove, or with grooves only, to take loose fins on four sides, or are dovetailed for laying on hot asphalt or adhesive.

The flooring strips are dried artificially prior to planing. The ready parquetry should have a moisture content of from 7 do 12%. The sizes of parquetry made in Poland are as follows:

Length: 20—95 cm, graded every 5 cm
Width: 4—12 cm, graded every 0.5 cm
Thickness: 16, 19 and 22 mm.

The quality grading of parquetry corresponds to that of flooring strips. Parquetry is bundled in lots of from 30 to 60. Bundles of parquetry with groove and tongue should contain equal numbers of right and left hand tongues.

One cubic metre of export quality grade I flooring strips yields up to 35 m² of parquetry. The sales unit in this case is one square metre.

Wainscoting is supplied with parquetry in lengths of 1 metre upwards, grades I and II.

The export of flooring strips and parquetry is in the hands of "PAGED", Plac Trzech Krzyży 18, Warsaw. Telegrams: HAZAPAGED — Warsaw.

POLISH COATED FABRICS

The Polish coated fabrics industry has, since the Second World War, been reorganised in a manner which ensures its unhampered development as regards both quality and quantity production. Scientific research bases have been organised in textile manufacturing centres to modernise methods of production, including production of coated fabrics, and to initiate the production of lines hitherto outside the range of this Polish industry. Factories, with modern equipment, have been set in operation, to supply the home and export markets with a steadily widening range of goods.

The most important among coated fabrics are leathercloth, bookbinding cloth and oilcloth.

Leathercloth is made in a variety of qualities, on a nitrocellulose or polyvinyl chloride base, e. g.:

Derma — used as an upholstery fabric and for making brief cases, ladies' handbags, belts, hat lining straps, etc.

Durex — admirably suited for fancy goods of all grades, for lining walls in railway carriages, etc.

Granitol — suitable for fancy goods manufacture, as well as for binding albums, note books and blotting pads, and for other similar purposes.

All the qualities of leathercloth mentioned are made in an attractive colour range and usually with embossed patterns.

They are supplied in a width of approx. 130 cm, in rolls of 30—50 metres.

Other varieties of coated fabrics made on a polyvinyl chloride base include:

Waterproof cloths for raincoats, protective aprons, etc., and fireproof cloths.

Polish bookbinding cloth, on a cotton or synthetic fibre base, known to the trade as "Calico", is another line which commands an important position on the market. It is made in a variety of colours, in widths of 94 to 105 cm, and is supplied in rolls of 50 metres.

No less outstanding are our oilcloths, made on a cotton base.

They are available, both plain and patterned, in a wide choice. Plain oilcloths are used mainly for upholstering perambulators, furniture for surgeries etc.

Patterned oilcloths serve as tablecloths for kitchen and dining room. Supplied in a width of 130 cm, in rolls of 11 metres.

Another article made on a cotton base is:
tracing cloth, used exclusively by draughtsmen.

The range of coated fabrics in current production also includes such items as:

Vinyleum — a substitute for linoleum, made either on a nitrocellulose or "Igelite" base.
abrasive cloths
fabrics for shoe socks
shoe nose linings
button fabrics

Poland, with its vast resources of coal, the basic raw material for plastics — the production of which is so closely linked with that of coated fabrics — has splendid opportunities for the development of this branch of industry.

The high quality and the wide range of Polish coated fabrics available are greatly esteemed by foreign customers. The demand for oilcloth, bookbinding and leathercloth is particularly brisk, and exports show a steady increase.

Export arrangements are in the hands of "CETEBE", Exporters and Importers of Textiles, Moniuszki 6, Łódź.

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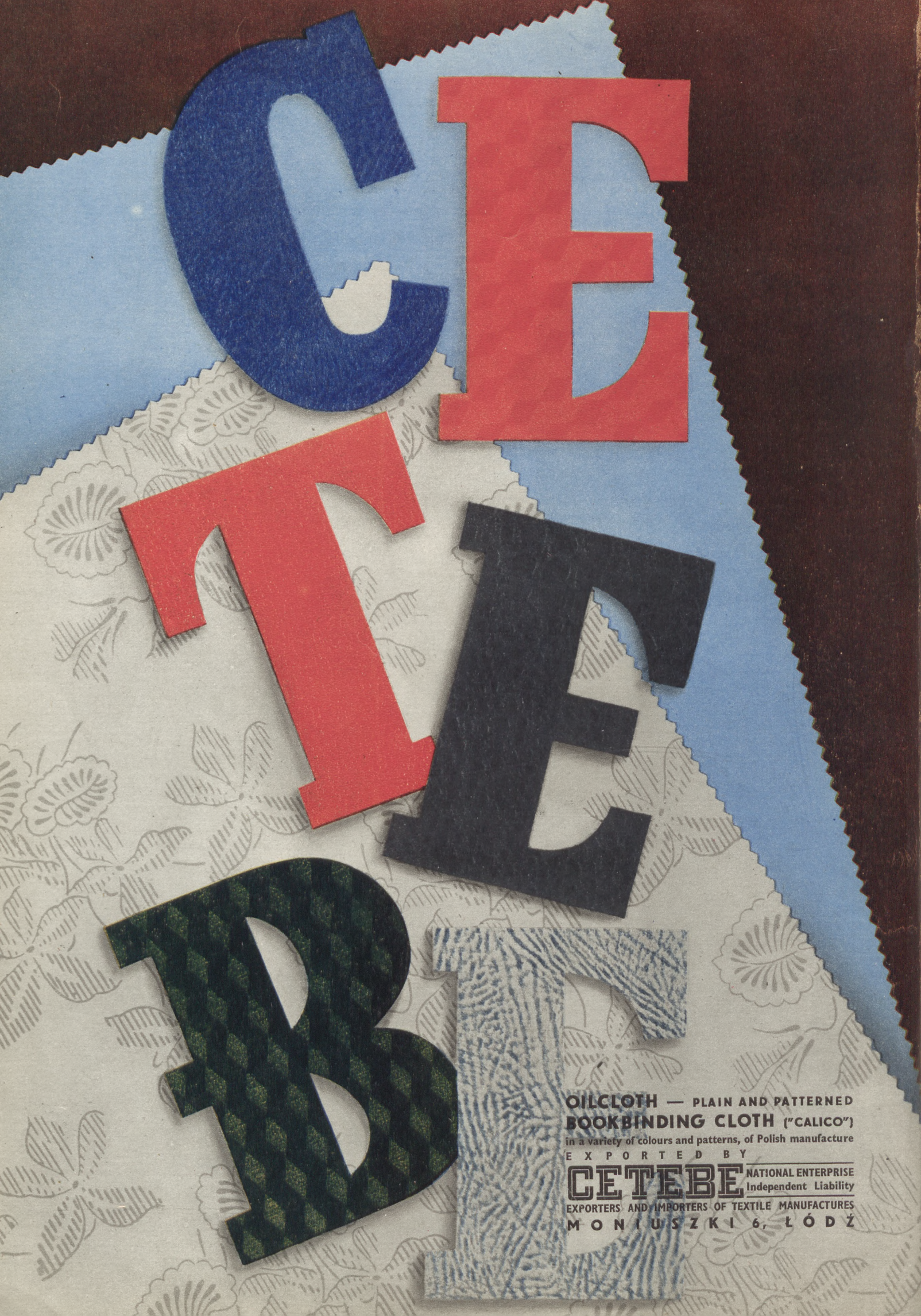


OILCLOTH — PLAIN AND PATTERNED
BOOKBINDING CLOTH ("CALICO")
in a variety of colours and patterns, of Polish manufacture

EXPORTED BY

CETEBE NATIONAL ENTERPRISE
Independent Liability

EXPORTERS AND IMPORTERS OF TEXTILE MANUFACTURES

MONIUSZKI 6, ŁÓDŹ

POLISH MEDICINAL HERBS

Vegetable remedies are the oldest means of medical treatment known to mankind and, thousands of chemical drugs being now available, have lost nothing of their importance. They are, in fact, unrivalled in certain instances, such as for the treatment of chronic cases of metabolic ailments. Medicinal herbs have for a time been unjustifiably neglected in countries having a widely developed chemical drugs industry, but the past 30 years have witnessed a return to phytotherapy, or treatment by medicinal herbs.

The people of Poland are accustomed to medicinal herbs, which are plentiful in the country and many varieties of which are specially cultivated.

Medicinal herbs cannot be actually described as typically Polish remedies, since they were, in ages past, popular throughout Central Europe. They have, however, become rare and almost forgotten in Central Europe, whereas in Poland they are available in such abundance as to be able easily to meet the demand of foreign markets.

There is, in addition to herbs which grow wild in Poland, a number of species which are being cultivated, as for instance salvia, thyme, balm, mint, coriander, marjoram, rue etc. which were, ages ago, brought to this country by Benedictine and Cistercian monks.

Polish 16th century botanists — Marcin Urzędow, in his book "Herbarz Polski" (Polish Herbage) published in 1595 and Szymon Syreniusz, Professor of Botany at the Cracow University, in his work "Zielnik czyli opisanie roślin" (Herbage, or a description of plants) published in 1613, both refer to the fact that such plants as salvia, rue, thyme and coriander were cultivated in almost every garden in Poland.

Plantations of medicinal herbs on a major scale and the export of medicinal herbs from Poland were not initiated until 1920. Exports of medicinal plants from Poland amounted, in 1929, to over 500000 kg.

The cultivation, harvesting and processing of medicinal herbs is now in the hands of "Centrala Zielarska" — Central Herbs Office — Grażyny 3, Warsaw — an enterprise specially appointed for this purpose, with branches in all major cities in Poland. Exports of medicinal herbs are dealt with by "Dalspo", Filtrowa 61, Warsaw. (Telegrams: DALSPO—WARSAW).

Scientific problems connected with medicinal plants are dealt with by the Pharmacological Faculties of Medical Academies which own special plantations of medicinal herbs in Warsaw, Łódź, Cracow and Poznań. A State Scientific Institute for Medicinal Herbs, with experimental plantations and research laboratories, has, moreover, been founded in Poznań.

The fact that cultivation and harvesting of medicinal herbs in Poland is under rigorous supervision accounts for the excellence and purity of Polish herbs, particularly in view of the fact that the Central Herbs Office is sparing no effort to meet all customers' requirements as regards selection and the form in which the herbs are supplied.

THERAPEUTIC CLASSIFICATION OF MEDICINAL HERBS GROWN IN POLAND

Alteratives *(Alterantia)*:

A. Recommended in cases of general metabolism:

1. Walnut tree leaves – *Folia Juglandis*
2. Elder bark and leaves – *Folia et cortex Sambuci*
3. Common nettle leaves – *Folia Urticae*
4. Liverwort – *Herba Agrimoniae*
5. Lion's foot – *Herba Alcemillae*
6. Strawberry leaves – *Herba Fragariae*
7. St. John's wort– *Herba Hyperici*
8. Pansy (Heart's ease) – *Herba Violae tricoloris*
9. Burdock root, also called Lappa root – *Radix Bardanae*
10. Soapwort root – *Radix Saponariae*
11. Dulcamara, Bitter-Sweet – *Stipites Dulcamarae*

B. Recommended in cases of obesity *(Reducentia)*:

1. Buckthorn fruit – *Fructus Rhamni catharticae*
2. Burdock root, Lappa root – *Radix Bardanae*
3. Dandelion root – *Radix Taraxaci*

C. Antidiabetics *(Antidiabetica)*:

1. Garlic bulb – *Bulbus Allii*
2. Myrtle leaves – *Folia Myrtillorum*
3. Common nettle leaves – *Folia Urticae*
4. Sorb tree apples – *Fructus Sorbi*
5. Strawberry leaves – *Herba Fragariae*
6. Goat's rue – *Herba Galegae*
7. Bean peel – *Pericarpium Phaseoli*

Anthelmintics *(Anthelminthica)*:

1. Garlic bulb – *Bulbus Allii*
2. Wormwood flowers – *Flores Absinthi*
3. Pellitory root flowers – *Flores Pyrethri*
4. Tansy flowers – *Flores Tenaceti*
5. Male fern root – *Rhizoma fibris*
6. Wormgoose-foot seeds — *Semen Chenopodii anthelmintici*

Anthasthmatics *(Antiasthmatica)*

Recommended in cases of asthma, whooping cough, hay fever:

1. Buckthorn bark – *Cortex Rhamni catharticae*
2. Mullein – *Flores Verbasci*
3. Walnut tree leaves – *Folia Juglandis*
4. Thyme – *Herba Thymi*
5. Scoparia – *Herba Scopariae*
6. Mugwort root – *Radix Artemisiae vulgaris*

Antibronchitica

Recommended in cases of laryngitis and bronchial catarrhs:

1. Mullein – *Flores Verbasci*
2. Colt's foot leaves – *Folia Farfarae*
3. Salvia sage leaves – *Folia Salviae*
4. Aniseed – *Fructus Anisi*
5. Iceland moss – *Lichen islandicus*
6. Mossy lungwort – *Lichen pulmonarius*

Antidysmenorrhoeics and Emmenagogues *(Antidysmenorrhoica et Emmenagoga)*:

1. Marigold flowers – *Flores Calendulae*
2. Hop flowers – *Flores Humuli*
3. Rose mallow flowers – *Flores Malvae arboriae*
4. Wormwood – *Herba Absinthi*
5. Common rue – *Herba Rutae*

Title page from Szymon Syreniusz's "Herbage" published in 1613

Antineuralgics *(Antineuralgica)*

Recommended in cases of neuralgia, sciatica, megrims etc.:

1. Camomile flowers – *Flores Chamomillae*
2. Tetterwort – *Herba Chelidonii*
3. Hop flowers – *Flores Humuli*
4. Peppermint leaves – *Folia Menthae pip.*
5. Valerian root – *Radix Valerianae*

Antisudorants and Antidiaphoretics
(Antihydrotica seu Antidiaphoretica)

Recommended in cases of excessive desudation in tuberculosis and glandular disturbances:

1. Belladonna leaves – *Folia Belladonnae*
2. Salvia leaves – *Folia Salviae*
3. Thorn apple leaves – *Folia Stramonii*
4. Iceland lichen – *Lichen islandicus*

Antipyretics *(Antipyretica):*

1. Willow bark – *Cortex Salicis*
2. Camomile flowers – *Flores Chamomillae*
3. Elder tree flowers, Bore tree flowers – *Flores Sambuci*
4. Steeple bush flowers – *Flores Spiraeae*
5. Linden flowers – *Flores Tiliae*
6. Menyanthin leaves – *Flores Menyanthidis*

Antirheumatics and Antiarthretics
(Antirheumatica et Antiarthretica)

1. Barberry bark – *Cortex Berberidis*
2. Common ash bark – *Cortex Fraxini*
3. Horse chestnut bark – *Cortex Hippocastani*
4. Buckthorn bark – *Cortex Rhamni cathart.*
5. Willow bark – *Cortex Salicis*
6. Steeple bush bark – *Cortex Spiraeae*
7. Blackberry leaves – *Folia Rubis nigri*
8. Birch buds – *Gemmae Betulae*
9. Horse tail herb – *Herba Equiseti*
10. Knotgrass – *Herba Polygoni avicularis*
11. Common nettle root — *Radix Urticae*

Cardiacs *(Cardiaca)*

Recommended in blood circulation troubles, circulation failure, neurotic disturbances, hypertension, angina of effort etc.:

1. Hawthorn flowers – *Flores Crataegi*
2. Lily of the Valley, herb and flowers – *Flores et herba Convallariae*
3. Summer pheasant's eye (Tall adonis) – *Herba Adonidis vernalis*
4. Lobelia (Eyebright) – *Herba Lobeliae*
5. Belladonna leaves – *Folia Belladonnae*
6. Foxglove leaves – *Folia Digitalis*
7. Stramonium leaves – *Folia Stramonii*
8. Mistletoe – *Herba Visci*
9. Valerian root – *Radix Valerianae*

Carminatives *(Carminativa)*

Recommended in cases of neurosis of the alimentary canal, flatulence and catarrhal states of the alimentary canal:

1. Camomile flowers – *Flores Chamomillae*
2. Roman camomile flowers – *Flores Chamomillae romanae*
3. Balm leaves – *Folia Melissae*
4. Peppermint leaves – *Folia Menthae pip.*
5. Salvia (sage) leaves – *Folia Salviae*
6. Carraway seeds – *Fructus Carui*
7. Fennel fruit – *Fructus Foeniculi*
8. Marjoram – *Herba Marjoranae*
9. Angelica root – *Radix Angelicae*
10. Lovage root – *Radix Levistici*
11. Flea-bane – *Herba Inulae*
12. Valerian root – *Radix Valerianae*
13. Calamus root – *Rhizoma Calami*

Cholagogues and Choleretics
(Cholagoga et Choleretica)

Recommended in cases of gall-stones, jaundice etc.:

1. Barberry bark – *Cortex Berberidis*
2. Buckthorn bark – *Cortex Frangulae*
3. French lavender (Purple stechas flowers) – *Flores Stoechadis*
4. Garden radish – *Radix Raphani recens*
5. Coriander fruit – *Fructus Coriandri*
6. Buckthorn fruit – *Fructus Rhamni catharticae*
7. Celandine, Tetterwort – *Herba Chelidonii*
8. Hyssop leaves – *Herba Hyssopi*
9. Common rue – *Herba Rutae*
10. Soapwort root – *Radix Saponariae*

Depuratives *(Depurativa)*

Antidotes and Antiseptics:

1. Walnut leaves – *Folia Juglandis*
2. Common elder bark and leaves – *Folia et cortex Sambuci*
3. Common nettle leaves – *Folia Urticae*
4. Melilot trifoil — *Herba Meliloti*
5. Pansy herb – *Herba Violae tricoloris*
6. Burdock root – *Radix Bardanae*
7. Buckthorn fruit – *Fructus Rhamni catharticae*
8. Fir buds – *Gemmae Pini*
9. Squinancywort – *Herba Asperulae*
10. Seasedge root – *Rhizoma Caricis*
11. Couch wheat root – *Rhizoma Graminis*

Digestives and Stomachics
(Digestiva et Amara seu Stomachica)

Stimulating the secretion of digestive juices:

1. Menyanthin leaves – *Folia Menyanthini*
2. Wormwood – *Herba Absinthi*
3. Blessed thistle leaves – *Herba Cardui benedicti*
4. Centaury tops – *Herba Centaurii*
5. Flea-bane root – *Radix Inulae*
6. Sweet smelling flag root – *Rhizoma Calami*

Diuretics *(Diuretica)*

Recommended in cases of kidney stones and catarrhal states of the ureter:

1. Blue-bottle – *Flores Cyani*
2. Birch leaves – *Folia Betulae*
3. Chimaphilline leaves – *Folia (Herba) Chimaphilae*
4. Bearberry leaves – *Folia Uvae ursi*
5. Wild vine leaves – *Folia Vitis idasae*
6. Juniper fruit – *Fructus Juniperi*
7. Parsley fruit and root – *Fructus et Radix Petroselini*
8. Asarabacca herb and root – *Herba et Radix Asari*
9. Strawberry leaves – *Herba Fragariae*
10. Common lovage root – *Radix Levistici*
11. Polypodi root – *Rhizoma Polypodii*
12. Stigmata of maize – *Stigmata Maysis*

Expectorants *(Expectoranta)*

Recommended in cases of laryngial and bronchial catarrhs etc.:

1. Everlasting flowers – *Flores Pedis cati*
2. Shepherd's club – *Flores Verbasci*
3. Common aniseed – *Fructus Anisi vulg.*
4. Fennel fruit – *Fructus Foeniculi*
5. Asarabacca herb – *Herba Asari*
6. Primrose herb and root – *Herba et radix Primulae*
7. Soapwort root – *Radix Saponariae*

Hypotonics *(Hypotonica)*

Reducing hypertension:

1. Garlic bulbs – *Bulbus Allii*
2. Onion bulbs – *Bulbus Cepae*
3. Hawthorn flowers – *Flores Crataegi*
4. Mistletoe – *Herba Visci*

Laxatives *(Laxantia)*

To relieve constipation; in certain liver troubles, etc.:

1. Buckthorn bark – *Cortex Frangulae*
2. Purging buckthorn fruit – *Fructus Rhamni catharticae*
3. Sumach root – *Radix Rhei*
4. Bryony root – *Radix Bryoniae*

Mucilaginants, Emollients and Obducents
(Mucilaginosa, Emollientia et Obducentia)

Recommended in cases of laryngial catarrhs and acute irritation, stomachal and intestinal catarrhs, as well as an external remedy in cases of phlegmons.

1. Onion bulb – *Bulbus Cepae*
2. Forest mallow flowers – *Flores Malvae silvestris*
3. Marsh-mallow leaves – *Folia Althaeae*
4. Ribgrass leaves – *Folia Plantaginae*
5. Iceland lichen – *Lichen islandicus*
6. Marsh-mallow root – *Radix Althaeae*
7. Comfray root – *Radix Symphyti (consolidae)*
8. Linseed – *Semen Lini*
9. White mustard seeds – Semen Sinapis albae

Obstipants and Astringents
(Obstipantia et Adstringentia)

Recommended in cases of acute diarrhoea and chronic inflammation of the mucosa, as well as for external use in cases of bed sores, putrescent wounds, etc.:

1. Ash bark – *Cortex Fraxini*
2. Oak bark – *Cortex Quercus*
3. Willow bark – *Cortex Salicis*
4. Walnut tree leaves – *Folia Juglandis*
5. Bearberry leaves – *Folia Uvae ursi*
6. Myrtle-berries – *Fructus Myrtillorum*
7. Silver-weed – *Herba Anserinae*
8. Pepperwort – *Herba Satureiae*
9. Hydrolapath root – *Radix Hydrolopathi*
10. Bistorta root – *Rhizoma Bistortae*
11. Tormentil root – *Rhizoma Tormentillae*

Sedatives *(Sedativa)*

Recommended in neurotic states, excessive excitability, insomnia:

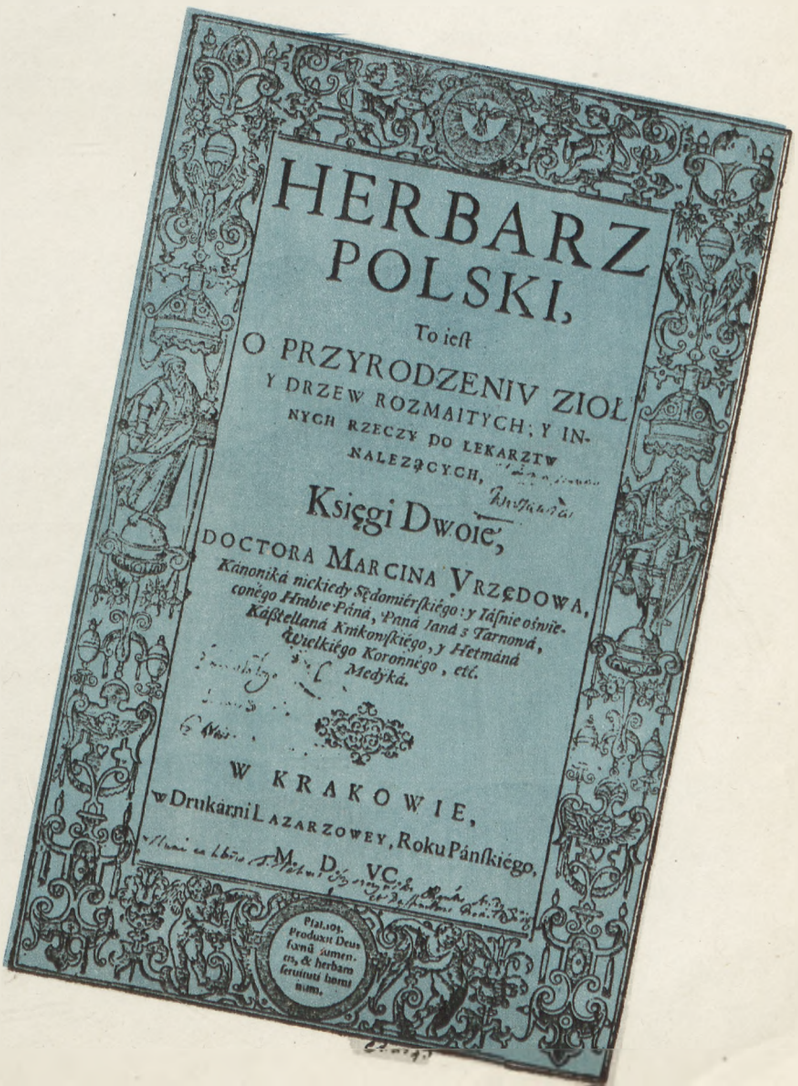
1. Hawthorn flowers – *Flores*
2. Hop flowers – *Flores Humuli*
3. Field balm – *Herba Melissae*
4. Angelica root – *Radix Archangelicae*
5. Common mugwort root – *Radix Artemisiae vulg.*
6. Lovage root – *Radix Levistici*
7. Paeony – *Radix Paeoniae*

Silicopharmaca *(Siliceous raw materials):*

1. Equisetum – *Herba Equiseti majoris*
2. Horse-tail herb – *Herba Equiseti minoris*
3. Galeopsis – *Herba Galeopsidis*
4. Knotgrass – *Herba Polygoni avicul.*

Styptics and Antihaemorrhagics
(Styptica seu Antihaemorroica)

1. Horse chestnut bark – *Cortex Hippocastani*
2. Shepherd's purse – *Herba Bursae pastoris*
3. Flea bane – *Herba Hydropiperis*
4. Milfoil – *Herba Millefolii*
5. Mistletoe – *Herba Visci*


HERBARZ POLSKI,
To iest
O PRZYRODZENIV ZIOŁ Y DRZEW ROZMAITYCH: Y INNYCH RZECZY DO LEKARZTW NALEZĄCYCH,
Ksiegi Dwoie,
DOCTORA MARCINA VRZĘDOWA,
Kánonika nickiedy Sędomiérskiego: y Iáśnie oświeconego Hmbie Páná, Páná Janá s Tarnowá, Káśtellaná Kinkowskiego, y Hetmáná Wielkiego Koronnego, etc. Medyká.
W KRAKOWIE,
w Drukárni LAZARZOWEY, Roku Páńskiego,
M. D. VC.

Title page from Marcin Urzedow's book "Polish Herbage" published in 1595

THE QUALITY OF POLISH MALTING BARLEY

The great demand in foreign markets for malting barley is attracting considerable interest to Poland's share in the export of this product.

Poland, as a country with a preponderance of industries over agriculture, and as a result of prevailing climatic conditions on the one hand and the economic structure of her agriculture on the other, has exceptional opportunities for the production of malting barley of outstanding quality.

The quality of Polish malting barley had, even prior to the recent war, and in spite of adverse production conditions resulting from the system of economic structure and government, reached a particularly high standard.

A comparison of Polish with Czech barley provides, since the latter generally holds the reputation of being the leading brand on the market, probably the best indication of the quality of Polish barley.

	Polish barleys			Czech barleys		
	average	min.	max.	average	min.	max.
Weight per hectolitre in kg . . .	72·7	65·9	77·0	70·5	65·1	73·6
Weight per 1000 grains in gm. .	44·6	38·1	52·4	43·8	40·0	49·7
Regularity of shape, % . . .	87·6	57·5	100	79·1	74·6	92·6
Siftings, % . . .	1·7	0·0	12·5	7·1	0·9	15·1
Moisture content %	13·2	10·9	16·6	12·7	11·3	14·4
Leucosin content %	10·57	8·7	13·6	10·83	8·67	14·88

Important changes have taken place since the war in malting barley production.

The economic transformations have been responsible for a considerable increase in the quantity of malting barley produced and for a vast improvement in quality.

The main pre-war producers were more or less petty farmers, cultivating barley on a comparatively small acreage, with a good deal of individuality in their attitude towards production problems. Conditions have, however, changed since then.

Planned economy and the confinement of cultures to specific regions have been instrumental in the achievement of optimum results in the cultivation of barley in Poland.

The fact that cultivation of malting barley is confined, in Poland, to comparatively large farm areas ensures uniformity of large batches of grain, a factor of paramount importance in the international barley trade. Malting barley cultures are under the rigorous control of the Plant Cultivation Institute. This Institute supervises, in close co-operation with scientific research stations, the concentration of malting barley cultures in districts with the most propitious climatic and soil conditions, offers, through its touring specialists, advice to farmers, and supplies synthetic fertilisers and such seed material as fully guarantees a high industrial crop standard. (The P.Z.H.R. malting variety of barley, derived from the Isaria and Skrzeszowice varieties — both of outstanding value).

Reference has been made merely to a few of the numerous favourable economic factors now influencing malting barley cultivation in Poland.

Climatic and soil conditions are undoubtedly such as to enable Poland to be ranged among the leading producers of malting barley. The climate in Polish production centres closely approximates to that of the best European malting barley producing regions. The comparative climatic features are shown in the following table:

Locality	Mean temperature °C					Rainfall in millimetres				
	IV	V	VI	VII	Av:	IV	V	VI	VII	Av:
Hanna (Moravia)	8·6	14·4	16·9	19·0	14·7	27	62	68	78	235
Halle (Saxony)	8·3	13·0	17·4	19·0	14·7	37	48	72	72	224
Kutno (Poland)	7·0	13·9	16·9	17·8	13·9	43	56	52	89	240

The Polish climate is satisfactory, generally speaking, as regards such factors as temperature, rainfall, atmospheric humidity, humidity of the soil and sunshine rate during the period of vegetation. The main malting barley producing areas in Poland are remarkable for moderate atmospheric humidity, a sufficient reserve of spring moisture in the soil, low rainfall rate and uniformity of temperature in summer, as well as for an adequate reserve of soil moisture.

Barley is a crop peculiar to temperate climates, with a short period of vegatation and a sparsely developed root system. This is why malting barley is, in Poland, cultivated in areas with an active soil in a high state of culture, rich in decayed plant matter and calcium, thoroughly tilled to the proper depth, and retaining a sufficient amount of warmth and moisture. Soils which are, for these reasons, of primary importance in Poland, consist of formations of loess, mild clay loams and fine silts, as well as loamy soils containing decayed plant matter, with suitable subsoil. These classes of soil are most propitious for malting barley crops which yield a well-shaped grain with proper leucosin-to-starch ratio and giving a high percentage of extract.

Particulars quoted by us as to the quality of Polish malting barley are provided in the form of characteristics of the individual features which are the criterion for its industrial value.

The data referred to below have been assembled on the basis of analyses carried out at the Poznań University, Institute for Plant Technology, an institution which carries out an annual inspection of the quality of malting barley from the entire growing area in Poland. Wherever possible, the analytical data quoted compare Polish barley with similar data concerning barleys produced in other countries. First of all, the physical data of the characteristics of Polish malting barley are dealt with, and this is followed up by a review of the chemical features.

Colour

The colour of the barley grain is influenced by outside factors and constitutes an indication of the suitability of climatic conditions and adequacy of cultivation, as well as of harvesting and storage; the variety of the barley is, on the other hand, a lesser factor in determining the colour. The colour of Polish malting barley is, as a rule, bright yellow, the husk having a characteristic lustre.

These features are of great importance in qualifying barley for malting purposes. Polish barleys are, in colour, similar to Czech barleys, but are much superior to barleys grown in the damp marine climate, as for instance in Scandinavian countries, the United Kingdom, etc.

Thickness of husk

Polish barleycorn has a peculiarly thin and delicate husk. This accounts for the fact that the yield of extract and, consequently, of beer made from Polish malting barley is extremely high.

Purity

Opportunities for the supplementary dressing of barleycorn in Poland are, as a result of mechanised farming methods and modernisation of harvesting and cleaning the grain, very considerable. Polish barley for the home market has an impurity average of 0.19% (from 0 to 0.13% in 1948). This high rate of barleycorn cleanliness is a factor enhancing the industrial yield of malt. The content of halves and damaged grains varies from zero to 0.4%, the average being 0.1%. Standards effective in Poland for malting barley supplied to the home market stipulate a maximum of 1% impurities (4).

Regularity of grain. Percentage of siftings

A feature of no little industrial importance is the regularity of barleycorn. Uniformity in size is of immense significance in the technological processing of barley. Grain which is irregular in size will not soak and germinate at a uniform rate and, consequently, the malt produced will not be of a uniform quality, and loss in the extract will result. Malting barleycorn must, moreover, be well-formed, short and plump, as this class of grain has a higher starch content and, thus, yields malt with a higher extract content.

The regularity of Polish barleycorn amounts, on average, to 93.5%, varying from 77.3% to 100%. The average content of siftings is 0.6%. The grain is short, well-shaped and plump — proof of a high starch content.

Weight per hectolitre

The weight per hectolitre of Polish malting barley is, admittedly, exceptionally high. This feature is closely linked with the shape of the grain which is, in the case of Polish barley, as already stated above, plump and regularly formed.

The per-hectolitre weight of Polish barley amounted, in 1948, to from 63.4 kg to 73.2 kg — an average of 70.14 kg, and in 1949 — to from 64.0 kg to 74.55 kg — an average of 69.40 kg. The Polish standard for malting barley for the home market stipulates a minimum weight of 68 kg (4).

The per-hectolitre weight of Czech barley amounted to the following figures: in 1947 — to 72.2 kg, in 1949 — to from 70.0 to 74.4 kg and in 1950 — to from 68.0 to 74.0 kg (1). German and Greek barleys show, as a rule, a lower weight basis. The per-hectolitre weight of other malting barleys from the 1950 harvest (according to tests carried out by the Swiss Breweries Experimental Station) amounted to an average, in the case of Swiss barley, of 75 kg, French barley — of 75.7 kg, Chilean barley — of 67.5 kg and Hungarian barley — of from 66.7 to 71.6 kg (3).

Weight per 1000 grains

The weight per 1000 grains of Polish malting barley amounts to an average of approximately 40 grams. The averages for the whole of Poland were, in 1948, 41.1 grams and, in 1949, 42.2 grams.

A weight of 40 grams per 1000 grains is the most advantageous weight for the purposes of the malting industry, since it appears that grain of this class is best suited for processing into malt. Moreover, a weight of 40 grams per 1000 grains, equivalent to a per-hectolitre weight of over 71 kg, indicates a high starch content and a high standard of grain development.

The weight of 1000 grains of Czech barley amounted in 1949, to from 40.0 to 47.4 grams (3) and in 1950 — to from 41 to 52 grams (2). The weight per 1000 grains of English barley amounted, in 1947, to an average of 43 grams.

Moisture content

The moisture content of barleycorn is a highly variable feature and depends on the expertness of the producer in drying the barley after the harvest, or during storage.

Polish malting barleys for home market use revealed in 1937, a moisture content varying from 9.23% to 16.87%, and in 1948 — from 11.49% to 15.08%, the average figure being 13.40%. Foreign barleys showed, in the same year, a higher moisture content; the average for German barley, for instance, amounted to 14.5%.

The moisture content in barleycorn is of great importance, in ensuring safety during storage, because there is a danger that excessive humidity will lead to the development of the enzymatic system of the barleycorn (oxidase), with attendant substantial starch loss.

Czech barleys showed, in 1949, a moisture content of from 11.6% to 15.3% (3) and in 1950 — of from 10.1% to 15.4% (2). Data published by the Swiss Breweries Experimental Station reveal that Danish barley which, in 1947, dominated, in quality, the international market, had an average moisture content of 14.72% and English barley — of 16.4%.

Extract content

The content of extract in barleycorn, a factor of fundamental importance for the malting and brewing industries, is one of the most important — if not the most important — criterions in determining the value of barley.

Polish malting barleys are remarkable for their high extract yield and eclipse, in this respect, competitive qualities of barley. Since the extract yield from barley (through the malting process) is the most important factor in determining the quality of beer, Polish barleys have, on account of their high extractive quality, for long had an established reputation in world markets.

Present results continue to show improvement, the extract content in barleys exceeding 79%, a figure which is by no means the upper limit.

The extract content in Polish 1948 harvest barley varied from 75.69 to 81.96% — an average of 79.35%. The 1949 figure varied from 73.02% to 81.63% — an average of 79.11%. Malt produced from Polish barley contains from 79 to 81% extract in the dry substance.

The average extract output of Polish 1947 harvest barleys amounted to 78.88% (1) and in 1950 — to 81.4% (1).

Other barleys showed, in 1950, the following average figures of extract content (2): Swiss — 79%, French — 78.2%, Chilean — 80.2%, English — below 80%, Hungarian — 78.1 to 79.9% and Danish — 80%. Danish malting barley which, in quantity, led the international barley trade, showed an average extract content of 78.5%.

Leucosin content

Polish pre-war malting barleys had, for barleys of superior quality, a comparatively high leucosin content. It varied from year to year, according to climatic conditions, from 11% to 12%. Such barley was suitable rather for the production of dark malt. The position has, however, since changed, and it has been found possible, as the result of introducing new varieties and of modernising farming methods, to reduce substantially the leucosin content, so that Polish barleys do not, in leucosin content, lag behind the best barleys to be found in the international market. Polish malting barley enjoyed, prior to the recent war, a good reputation in foreign markets, though its comparatively high leucosin content was viewed with some disfavour. We have since overcome this disadvantage.

The leucosin content in Polish barley was, in 1948, from 8.84 to 13.08%, or an average of 10.81%, and in 1949 — an average of 11.2%.

The maximum leucosin content, admissible for the home market in Poland, is 11% (4).

Czech barley from the 1947 harvest (1) shows an average leucosin content of 11.7%, from the 1949 harvest (3) — of from 8.41% to 11.18% and from the 1950 harvest — of from 9.46% to 13.32% (3).

The leucosin content in other barleys was, in 1950, as follows(2): Swiss — 15.7%, French — 11.7%, Chilean — 10.7%, English — 10.1%, Hungarian — 10.6%, American — from 9.8% to 12.8%, Danish — from 9.2% to 9.6%; the average for Scandinavian barley was 11%.

Germination faculty and energy

The faculty and energy of germination are the two basic factors determining the value of barley in the malting processes.

A 92.4% energy of germination and a 97.4% faculty of germination as shown by Polish malting barley in 1948 speak highly of the suitability of this barley for malting, as well as of the ease and uniformity with which it can be processed into high grade malt. These are very important features of Polish malting barley, features which have been permanent for many years.

The standard fixed for the energy of germination of Polish malting barley supplied to the home market is 92% (4).

The germination faculty of Czech barleycorn amounted, in 1947 (1), to an average of 98.4% and in 1950 to from 80% to 99.9%.

The details quoted in the present article should be considered as being merely of a comparative character, all data concerning the quality of malting barleys being constantly subject to unforeseen fluctuations in accordance with climatic conditions. The breeding and cultivation of barley in Poland are on an exceptionally high level, so that further improvement in the quality of Polish malting barley can, as a result of systematic scientific research, be confidently anticipated.

In summing up the details referred to in the present article, the following conclusions can be reached:

1) Poland possesses all natural soil, climatic, geographical and economic conditions for the production of high-grade malting barley.
2) The present quality of Polish malting barley shows a considerable improvement over the quality produced before the war.
3) Polish post-war malting barley is of high industrial value.
4) Polish malting barley is, in quality, equal to the standard of the highest grade competitive barleys, as will be seen from the following table giving the leading features:

Malting barley	Harvest year	Extract content	Leucosin content	Weight per hectolitre
Polish . . .	1948	75·69–81·96	8·84–13·08	63·4–75·2
Polish . . .	1949	73·02–81·63	8·73–14·58	64–74·5
Czech. . . .	1947	78·8	11·7	72·2
Czech. . . .	1949	2	8·41–11·81	70·0–74·0
Czech. . . .	1950	–	9·46–13·32	68·0–74·0
Swiss	1950	79·0	15·7	75·0
French . . .	1950	78·2	11·7	75·7
Chilean . .	1950	80·2	10·7	67·5
English . . .	1950	below 80·0	10·1	–
Hungarian .	1950	78·1–79·9	10·6	66·7–71·6
Danish . . .	1950	80·0	9·2–9·6	–
American . .	1950	–	9·8–12·8	–

Bibliographic references:

1. "Kvas" No. 5 page (1948)
2. "Kvas" No. 16 page 233 (195)
3. "Kvas" No. 19 page 248 (1949)
4. Janicki J. "Jęczmień Browarny ("Malting Barley") Warsaw, 1949.
5. Juvova M. "Zapravy Ustavu Kvasneho Prumyslu" Brno, 1935

Prof. dr J. Janicki

HIGH-QUALITY
MALTING BARLEY

»ROLIMPEX«

EXPORTERS AND IMPORTERS OF AGRICULTURAL PRODUCTS, CONCENTRATED FODDERS AND SUGAR

EXPORTED BY NATIONAL ENTERPRISE (INDEPENDENT LIABILITY)

HIBNERA 5, WARSAW

THE EXPORT OF CANNED FISH FROM POLAND

Poland is, as a result of commanding more than 300 miles of Baltic coast line and abounding in inland waters — primarily in numerous lakes — and in piscicultural farms of long standing, an important producer of fish.

The development of the fish processing industry is one of the factors influencing fish consumption and fish trade. The fish processing industry enables all surpluses of sea and freshwater fish to be converted into a variety of products of high culinary and nutritive value, including smoked, salted and pickled fish, as well as canned fish products, and is thus one of the main elements in the promotion of fisheries.

The production of canned fish products, sterilised in temperatures above 100°C is, among other fish processing methods, of particular importance, since canned fish will, when stored in normal temperatures, keep over long periods without danger of putrefaction.

This important feature has, added to the other virtues of canned fish products, been instrumental in raising Polish fish canning to the important level it now occupies. A number of canning factories, situated in the fishing ports and in the vicinity of the main inland fishing areas, produces every year millions of tins of fish products in a wide range.

Output continues to increase and to improve and is in a position to provide home and foreign consumers with a delicious, ready-to-serve product, without any extra preparation or seasoning. Our canning industry supplies a high-class product calculated to satisfy the most fastidious consumer.

The high quality of canned fish products exported by Poland is contingent on a whole series of factors. The first is the proximity of supply bases, which enables the fish to be delivered to the canning factory in an absolutely fresh condition. Another important factor is, apart from the modern technical equipment of the factories, the work emulation and rationalisation movement among the working staff and the trend to improve skill.

Yet another factor of major importance is the present centralisation of the entire fish canning industry in the hands of one large enterprise, a system which, in financial, technical, organisational and commercial respects, has an indisputable advantage over the pre-war one of individual small producers.

The entire production cycle is subject to rigorous

CANNED FISH
AND FISH PRODUCTS

EXPORTED BY
ANIMEX
NATIONAL ENTERPRISE (INDEPENDENT LIABI

EXPORTERS AND IMPORTERS OF ANIMAL PRODUCTS

HOŻA 66/68, WARSAW · TELEGRAMS: ANIMEX-WARSAW

technical control and, when the goods are ready for dispatch abroad, they are examined by Inspectors of Standards and by an official veterinary surgeon.

Each batch of goods exported is, in addition to the quality control stipulated by the customer in his contract, examined by Inspectors of Standards, to ensure that the goods comply as to quality, appearance, properties, packing, labelling, etc. with effective standard specifications. The officiating veterinary surgeon has to satisfy himself that the goods comply with sanitary regulations and are fit for consumption. Official certificates are issued for all these examinations and are, as a rule, sent with the consignment to the customer abroad.

All these factors have been responsible for Polish exports of canned fish products which, prior to the war, were on a limited scale and comprised but a small variety of products, having found wide scope for expansion. We can now say without exaggeration that Polish canned fish products have, in spite of keen competition by traditional, large exporters, secured a firm footing in numerous foreign markets, both on the continent of Europe and overseas, and continue to attract new customers and new markets.

The canned fish products which Poland has available for export are, without exception, intended for long keeping, as opposed to such products as pickled or smoked fish which have no such lasting qualities. Canned fish products offered for export may be divided into five groups. The first comprises canned cooked, fried, dried or smoked fish packed in highly refined soya or rape-seed oil, and sterilised. The second group comprises, in particular, "Baltic smoked sprats in oil" — an outstanding canned product famous and highly valued even prior to the recent war in European and American markets. Canned sprats were, in post-war years, particularly in 1950, in short supply and could not meet the foreign market demand. Other varieties of canned fish in oil are fillets of eel, vendace and smoked herring. Fish in tomato sauce is still another variety. It includes various species of fried sea and freshwater fish in a delicious and aromatis sauce consisting, mainly, of tomato pulp with a seasoning of sugar, oil, salt, fried onion and such spices as pepper, cubeb, bay leaf, etc.

Fish in tomato sauce — one of the specialities of the Polish fish canning industry, typical for its delicate yet piquant, spicy flavour, has been introduced into foreign markets since the recent war. It immediately secured a strong and lasting footing in many European countries and in Israel, and has attracted much interest in markets so well supplied with fish as the United Kingdom and Australia. Canned fish products of this type include the popular so-called "Bytchki" and "Scomber". The former consists of the smaller and the latter of the larger varieties of fish — roach, perch, perch-pike and other species. Exports also include: "Flounders in tomato sauce", "Mackerel in tomato sauce", "Herring in tomato sauce", "Bream in tomato sauce", "Vimba in tomato sauce" (Abramis Vimba) and "Vendace in tomato sauce". The third group of canned fish products embraces fish packed in its natural juice — superior quality fat herrings, mackerel and salmon.

Next follow "Fish Balls in Greek sauce". The raw material which goes to the preparation of this savoury, yet inexpensive and thus extremely popular delicacy, is cod; the fish balls contain, in addition to minced fish, onions stewed in oil, vegetables and spice. A spicy sauce, on a tomato base, is poured over the fish balls.

The last group of canned products is represented by fish pastes, of which a vitamin paste made of cod liver must be specially mentioned.

Fish is packed in tins, in sizes of 500 grams and 150 grams net (round), 200 grams net (oval) and 110 grams and 120 grams net (rectangular). The range of tins will be augmented by elliptical type 1/4C or 1/4 Dingley, and possibly certain other types of tins. Each tin is provided with a varnished label, in Polish and English wording. The tins are wrapped in paper and packed (in stacks) in standardised new wooden cases holding from 100 to 250 tins. The canned fish product is, after the cases are banded and marked, ready for despatch and will withstand rough handling and transport over long distances.

It should be added that the demand for Polish canned fish is, in spite of steadily increasing production, so considerable that deliveries ex stock can only be made in exceptional cases, and orders are invariably accepted for despatch in from a few weeks to a few months. This does not apply to sample lots or smaller transactions.

The sole exporters of products of the Polish fish canning industry are "ANIMEX", Hoża 66/68, Warsaw.

Several factors account for the high quality standard of Polish canned fish for export: the freshness of fish used for processing, modern equipment of canning factories, centralisation of production in the hands of one large enterprise and rigorous quality control of the products exported

MYCZKI
MYCZKI
MYCZKI

PAPER AND PAPER MANUFACTURES

DECALCOMANIA
FOR POTTERY
"TOMOPHANE" PAPER

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Papexport

WSPÓLNA 50, WARSAW

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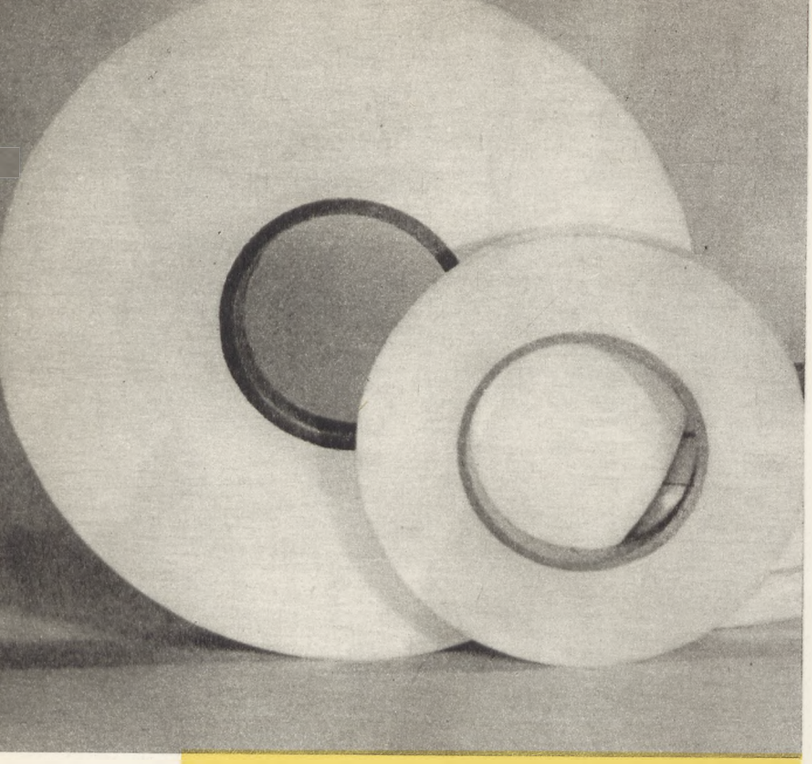


POLISH CIGARETTE PAPER

The problem of producing a new kind of paper suitable for cigarette manufacture and which would, without impairing the fragrance of tobacco, be strong enough for use in high-speed cigarette machines, was forced on the paper industry by the tobacco industry which began to develop in the 19th century.

A considerable number of observations and experiments have proved flax fibre to be the best raw material for cigarette paper which, made from this fibre, has a number of advantages, namely:

1) it has the softness of down,
2) is chemically pure,
3) emits a mild aroma when burning,
4) burns at a uniform rate,
5) is sufficiently strong for use in high-speed cigarette machines, and
6) the paper ash adheres closely to the tobacco ash.

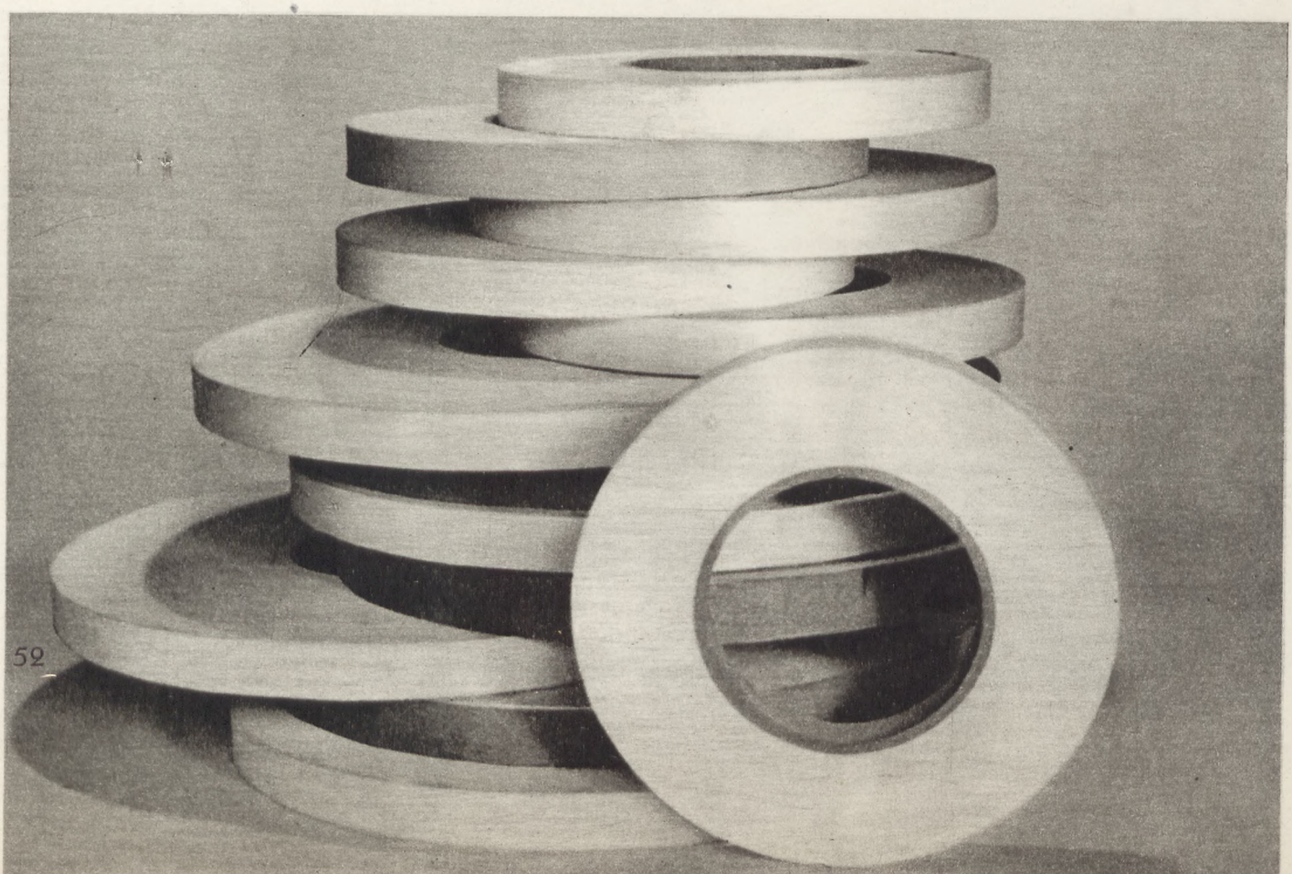
The millions of smokers throughout the world, their whims and requirements have caused cigarette paper to become an important item of international goods exchange. Cigarette paper manufacturers started, in order to satisfy even the most fastidious smoker, to produce a number of different qualities which were, according to the requirements of individual markets, suitably blended and sometimes even sweetened, yet the manufacturing process always remained the manufacturer's closely guarded secret.

Foreign markets have been familiar with Polish cigarette paper for many years. Our "Solali" brand cigarette paper was, prior to the Second World War, being imported by a host of customers in all parts of the world. Polish cigarette paper is made from pure flax fibre. It is, as a result of ideally pure spring water being used throughout all production cycles, free from extraneous mineral impurities and has an excellent taste. The large output of basic grades of combustible and incombustible cigarette paper, the range of types in which it is available (vergé, velin or filligree), and the compliance of the Polish manufacturer with all the wishes of individual customers have been instrumental in causing the exports of cigarette papers to increase steadily and spread to new markets.

Polish cigarette paper is exported in bobbins, sheets, booklets or tubes with mouthpieces. Cigarette paper can be made in various substances and of varying size, according to customers' requirements. Cigarette paper is carefully selected. A special kind of export packing fully protects the paper from damage in transit.

Orders for cigarette paper in optional quantities are accepted by the sole exporters "PAPEXPORT", Paper Exporters and Importers, Wspólna 50, Warsaw. Telephones: 81000 and 81002. Telegrams: PAPEXPORT-WARSAW.

Polish cigarette paper is exported in bobbins, booklets and in the form of tubes with cardboard mouthpieces. Cigarette paper is made to any desired substance, standard and dimensions



CIGARETTE PAPER
IN POLAND
PAPER MILL
SOLALI

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The "Polfracht" Shipbroking and Chartering Company, founded on the 1st January, 1951, is the sole shipbroking and chartering enterprise in Poland, with the exclusive right of acting for Poland's foreign trade and mercantile marine. "Polfracht" executes, moreover, numerous orders from neighbouring countries which are contingent on Polish shipping ports, as well as from a number of other countries interested in trade with Polish ports. "Polfracht" affords valuable assistance to shipowners interested in Polish port services and to all merchants intending to avail themselves of Polish tonnage.

"Polfracht" handles all Polish cargoes proceeding by sea, transit as well as foreign cargoes, on behalf of both the Polish Merchant Service and foreign vessels plying for hire in the Polish market. "Polfracht" provides the necessary tonnage on principles of sound co-operation with foreign shipping lines, with due consideration to effective customs, and accords uniform treatment without discrimination as between foreign shipowners interested in cargoes passing through Polish ports. "Polfracht" exercises due care to ensure that all commitments under shipping contracts concluded are carried out scrupulously and without prejudice. All such contracts enjoy the benefits accruing from the production achievements of Polish dockers and from the technical achievements in Polish ports; "Polfracht" is thus in a position to guarantee to shipowners a steadily increasing expedition in handling cargoes in order to reduce the time spent by the vessel in port. The remarkable achievements in the speed of handling goods in Polish ports are not without considerable benefit to shipowners and shippers, as they eliminate one of the principal indefinite elements in the computation of ship's operating costs.

"Polfracht" offers current information to exporters and importers as to the opportunities of chartering tonnage, as to shipping charges and as to handling facilities in those ports which act as an intermediary in goods exchange between Poland and foreign countries. "Polfracht" carefully plans all arrangements for sea transport, thus eliminating, to a major extent, the contingence of cargoes on temporary disturbances of the freight market, at the same time ensuring prompt deliveries and giving shipowners an opportunity to conclude transactions to the greatest advantage.

This new form of chartering, introduced in accordance with definite needs of Poland's national economy, does not by any means prejudice co-operation with countries having a different economic structure. On the contrary — the concentration in the hands of "Polfracht" of millions of tons of the annual goods volume offers shipowners the opportunity of selecting cargoes to suit their available tonnage. "Polfracht" is a member of the Baltic and International Maritime Conference in Copenhagen and relies, when making arrangements for foreign tonnage, on the generally accepted and prevalent shipping practice. It will, no doubt, interest readers to know that at the recent General Meeting of Members of the Baltic and International Maritime Conference, held in Copenhagen in June last, the Chairman stated in his report that of the three charter-parties (new or revised) which became effective in the period under review, two were Polish — the "ORECON" Charter-party applying to the carriage of Scandinavian ores to Poland and the "POLCON" Charter-party applying to the carriage of Polish coal to all destinations in the world. These Charter-parties were drawn up in agreement with the Polish shipbroker and approved and recommended by the Conference for use.

The number of foreign customers of the reorganised Polish shipbroker service is, as a result of the high standard of services rendered, steadily increasing. Czechoslovakia, Hungary, Bulgaria and the German Democratic Republic avail themselves regularly of "Polfracht's" services in all problems of sea transport and entrust to it the securing of tonnage for their cargoes, even for those passing through ports other than Polish. The increased availability of miscellaneous cargoes from Poland, Czechoslovakia, Hungary and other countries stimulates a growing interest in shipping circles interested in offering their utilisable tonnage. The steadily developing Polish merchant service is also, and to a growing extent, offering its services in foreign markets through the medium of "Polfracht". The Polish charter service which concentrates, on the one hand, a substantial goods volume and, on the other, tonnage, is establishing in Gdynia a freight market of considerable importance.

TRADE CUSTOM RELATING TO HOLIDAY TIME IN POLISH PORTS

The Polish Chamber of Foreign Trade has approved and published the following as Polish trade custom:

"Holiday time in Polish ports shall take effect as from 2300 hours on the day preceding a sunday or holiday and terminate at 2300 on the holiday.

There is nothing to prevent this principle from being applied where the parties have, in specific instances, agreed, under the Charter-Party, to adopt a different holiday time basis, and/or have entered a reservation to the effect that such time as may have been agreed upon shall remain effective in spite of any conflicting port custom, or have, without making such reservation, clearly defined the holiday time."

THE EXPORT OF SCIENTIFIC PUBLICATIONS

Scientific literature is one of the main items among Poland's steadily increasing book exports.

Works by Polish scientists have for long constituted a valuable contribution to world literature of science and, in certain instances, such as the treatise by Nicholas Copernicus, "De Revolutionibus Orbium Coelestium", proved instrumental in diverting science on to entirely new paths.

The unstinted care and encouragement given to science by the government of People's Poland in the years following the Second World War have resulted in the country's scientific literature being regularly supplemented by new and valuable contributions. This has led to a growing interest being displayed by foreign countries in Polish scientific literature and to a systematic study of this section of the Polish publishing market. No sooner does any book of outstanding scientific value appear on the shelves, than numerous orders start coming in from abroad, particularly if the book happens to be published in a foreign language, or contains abstracts in foreign languages.

Title pages of a few of the Polish books published in foreign languages

EUS SUPPLEMENTA VOL. 19

THE LAW OF GRECO-ROMAN EGYPT IN THE LIGHT OF THE PAPYRI

332 B. C.–640 A. D.

Vol. II

POLITICAL AND ADMINISTRATIVE LAW

By

RAPHAEL TAUBENSCHLAG

Professor of Ancient Law, University of Warsaw

ACADEMIA POLONA LITTERARUM ET SCIENTIARUM

PINDARI CARMINA

CUM FRAGMENTIS

EDIDIT

ALEXANDER TURYN

MDCCCLXXIII · P·A·V· · MCMXLVIII ·

WARSAW SOCIETY OF SCIENCES AND LETTERS

DEPARTMENT II OF PHILOSOPHY, HISTORY AND SOCIOLOGY

VOL. IV

1950

THE JOURNAL OF JURISTIC PAPYROLOGY

EDITED BY

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GEORGE MANTEUFFEL
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MONOGRAFIE MATEMATYCZNE

KOMITET REDAKCYJNY

K. BORSUK, B. KNASTER, K. KURATOWSKI, W. SIERPIŃSKI, W. ŚLEBODZIŃSKI, H. STEINHAUS, A. ZYGMUND

TOM XX

TOPOLOGIE I

ESPACES MÉTRISABLES, ESPACES COMPLETS

PAR

CASIMIR KURATOWSKI

PROFESSEUR À L'UNIVERSITÉ DE VARSOVIE

DEUXIÈME ÉDITION
REVUE ET AUGMENTÉE

Z SUBWENCJI PREZYDIUM RADY MINISTRÓW
I MINISTERSTWA OŚWIATY

WARSZAWA — WROCŁAW 1948

POLSKA AKADEMIA UMIEJĘTNOŚCI

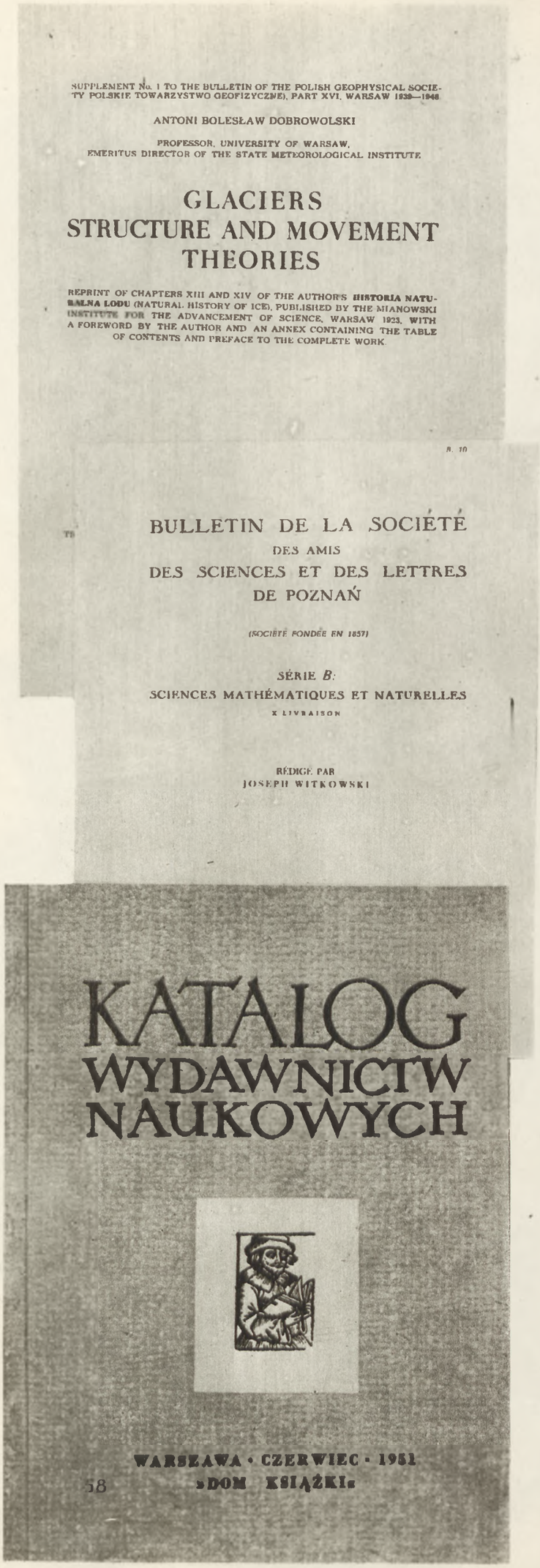
ARCHIWUM FILOLOGICZNE NR 22

LADISLAUS MADYDA

DE ARTE POËTICA POST ARISTOTELEM EXCULTA QUAESTIONES SELECTAE

MDCCCLXXIII · P·A·V· · MCMXLVIII ·

AKADEMIA POLSKIEJ AKADEMII UMIEJĘTNOŚCI
NAKŁADEM FUNDUSZU KULTURALNEGO PREZYDIUM RADY MINISTRÓW I WYDZ. NAUKI MINISTERSTWA OŚWIATY
KRAKÓW 1948



The particular demand by foreign countries for any Polish book dealing with mathematics reaches its peak in the case of the "Mathematical Monographs" — an impressive publication by the Polish Society for Mathematics ("Polskie Towarzystwo Matematyczne"). This publication includes contributions by such eminent scientists as Professor Dr. Wacław Sierpiński, Prof. Dr. Kazimierz Kuratowski, Prof. Dr. Stefan Banach, Prof. Dr. Karol Borsuk, Marceli Stark and others. One of the works in this series,"Topologie" by Prof. Dr. K. Kuratowski, has recently been awarded a State prize. "Topologie", written in French, is in two volumes, of which the second was not available until the end of 1950. This work is now out of print, and a new edition is to be issued in view of orders which are still being received from abroad.

Much interest has also been revealed by foreign science circles in Polish publications dealing with papyrology, whether such publications are written or edited by eminent Polish scientists, particularly professors of Warsaw University, Dr. Rafał Taubenschlag and Jerzy Manteuffel ("The Law of Greco-Roman Egypt in the Light of the Papyri", Vol. II by Prof. Dr. R. Taubenschlag and "The Journal of Juristic Papyrology", Vols. II, III, IV). The great popularity of these publications is reflected in orders received from India, Australia, Syria, the Americas, Egypt, Lebanon, Iran, etc. Complimentary reviews by foreign papyrologists emphasize the exceptional value of these publications.

The following are examples of other titles in demand abroad: "Les graptolithes et quelques nouveaux groupes d'animaux du tremadoc de la Pologne" by Prof. Dr. Roman Kozłowski, (dealing with palaentology).

A series of publications of the Polish Academy of Science: "Bulletin International — Classe des Sciences Mathematiques et Naturelles";

"Pindari — Carmina cum fragmentis" — edited by Prof. Dr. Alexander Turyn;

"De arte poetica..." by Władysław Madyda.

"The Apterygotan Fauna of Poland in relation to the World-Fauna" by Jan Stach.

"K'ab ibn Zubair — Le Divan" — a criticism by Tadeusz Kowalski.

Publications of the Wrocław Society of Science:

"La langue mongole des transcriptions chinoises du XIV siècle" — by Dr. Marian Lewicki.

"De Apollodoreis in Pliniana Graeciae Descriptione" — by Prof. Dr. Bronisław Biliński.

The export of books from Poland has (since April 1950) been concentrated in the hands of "Dom Książki", Import and Export Office, Nowy Świat 50 (telegrams: DEKABIMEX). Full particulars of Polish publications similar to those described are contained in the Catalogue of Scientific Publications which, recently published by "Dom Książki", help to inform foreign customers about the Polish publishing market.

CHOPIN'S YOUTH – THE SUBJECT OF A NEW POLISH FILM

The story of Young Chopin — Producer: "Film Polski". Edited and directed by Alexander Ford. Camera operator — Jaroslav Tuzar. Featuring Czesław Wołłejko in the role of Chopin. Musical director — K. Serocki. Piano soloists: Halina Czerny-Stefanska, winner of the 1st prize at the International Chopin Competition in Warsaw (1950) and Władysław Kędra, prize-winner in the same competition. Address: "Film Polski", Marszałkowska 57, Warsaw. Telegrams: IMEXFILM — Warsaw.

...Young Frédéric riding in a carriage to Żelazowa Wola is forced, owing to a mishap on the way, to break his journey and take shelter for the night in a peasant's hut. Taking the road in the morning, he encounters a wedding procession. He is thrilled by the hilarious and picturesque throng. The room at the inn is a riot of dancing and music — music rapturous and redolent of the character, temperament and vitality of the common folk. Frédéric is spellbound; he consumes — with eye and ear — this scene from the life of the Polish village. This scene is ultimately reflected, in artistic form, in Frédéric's later works. Dawn breaking through the window of his room sees this scene sealed — with a chord... the Mazurka in A-minor.

The above is an excerpt from the scenario of a new Polish film — a historical and biographical film about Frédéric Chopin.

The Polish film industry after having completed, in 1950, a musical film dealing with the famous Polish composer Stanisław Moniuszko and with his opera "Halka", reached out for a new subject, ambitious and difficult. "Film Polski" decided to commit to the screen one of Poland's national geniuses — Frédéric Chopin — whose name is identified with music in its highest form of accomplishment and refinement.

The scenario was written in the form of a tale from Chopin's youth — a period between his sixteenth year and maturity.

Young Chopin, while still a pupil at the school of music, made friends with the progressive youth then

under the influence of a radical group of romanticists. Warsaw, throbbing with defiance and rebellion against Czarist tyranny and the Polish reactionary elements, left a deep impression on Chopin.

The film portrays the young composer against the background of this era and emphasises the influence of environment and contemporary political developments in Europe on the shaping of the mind and temperament of this genius among musicians. It explains, above all, the sources of Chopin's music and its organic bond with folk and national creativeness.

The author of the scenario has sought to present the historical reality without distorting the features of the central character in the film. And thus, the silhouette of Chopin remains before the audience almost throughout the action, which is carefully synchronised with

the musical elements — elements which constitute a valuable feature of this dramatic film.

The role of young Chopin is played by Czesław Wołłejko, a talented artist of the Warsaw stage. Chopin's works included in the film are played by leading Polish pianists — Halina Czerny-Stefańska and Władysław Kędra.

Particular reference must be made to the excellence of the documentation on which the film is based. Literature, museum collections and archives, contemporary illustrations, folklore studies — all these documents have been ransacked in order to ensure authenticity.

This historical and biographical Frédéric Chopin film will be shown early in 1952 on the screens of cinemas abroad.

Scenes from the new film dealing with Frédéric Chopin's youth

ORGANISATIONAL CHANGES IN POLISH FOREIGN TRADE ENTERPRISES

A number of changes in the organisation of Polish foreign trade enterprises took place in the latter part of 1951.

The network of enterprises serving foreign trade has, as a result of these reorganisations, been rendered more comprehensible, thus facilitating the customer's choice of the enterprise to satisfy his requirements. An up-to-date list of Polish foreign trade enterprises is published below. It includes the following recent changes:

I

Changes in import operations

1. "Polimex" (Czackiego 7/9, Warsaw)
   has transferred to "Elektrim" (Sienna 32, Warsaw)
   all matters connected with the import of boilers and turbines;
   has transferred to "Motoimport" (Mazowiecka 13, Warsaw)
   all matters connected with the import of agricultural machinery and aeronautical equipment;
   has transferred to "Metalexport" (Mokotowska 39, Warsaw)
   all matters connected with the import of rolling stock and incidental equipment;
   has transferred to "Varimex" (Wilcza 50/52, Warsaw)
   all matters connected with the import of scientific and laboratory apparatus, as well as of tools and test gauges;
   has taken over from "Textilimport", (22 Lipca 2, Łódź)
   all matters connected with the import of textile machinery;
   has taken over from "Varimex" (Wilcza 50/52, Warsaw)
   all matters connected with the import of printing machinery and equipment.
2. "Varimex" (Wilcza 50/52, Warsaw)
   has transferred to "Polimex" (Czackiego 7/9, Warsaw)
   all matters connected with the import of printing machinery and equipment;
   has transferred to "Minex" (Kredytowa 4, Warsaw)
   all matters connected with the import of mineral raw materials and semi-products, as well as of those minerals the production of which is organically connected with the quarrying of the raw material; exceptions to this transfer are pivot bearing stones, diamonds for glass cutters, abrasives, stones for refineries (artificially reinforced), asbestos sheets, natural pumice and whetstones, Klingerite sheets, mica gaskets, plumbago crucibles, etc., all of which remain the responsibility of "Varimex";
   has taken over from "Ciech" (Jasna 10, Warsaw and "Polimex" (Czackiego 7/9, Warsaw)
   all matters connected with the import of scientific and laboratory equipment.
3. "Centrozap", (Plebiscytowa 36, Katowice).
   This enterprise has been formed to take over from the "Supply Centre for the Coal Mining Industry" and the "Supply Centre for the Iron and Steel Industry" all matters pertaining to supplies for the mining and metallurgical industries.

II

Changes in export and import trade

1. The following 7 enterprises formerly handling farm produce and foods have ceased to exist:
   a) "Cukrozbyt", Export Office,
   b) "Polmeat", Foreign Trade Department of the Central Board of the Meat Industry,
   c) "Hortus", Foreign Trade Company for Seeds,
   d) Foreign Trade Office of the Polish Grain Establishments,
   e) Foreign Trade Office of the State Company for Edible Forest Products "LAS",
   f) Foreign Trade Office of the Dairy and Egg Co-operatives,
   g) "Imrex", Foreign Office of the Central Fish Trading Company

   and the following three enterprises have been formed to take over their operations:
   a) "Animex", Exporters and Importers of Animal Products, Fish and Fish Products (Hoża 66/68, Warsaw);
   b) "Rolimpex", Exporters and Importers of Agricultural Products, Concentrated Fodders and Sugar (Kopernika 30, Warsaw);
   c) "Dalspo", Foreign Trade Company, (Filtrowa 59, Warsaw) — (Foods, Fats, Edible Forest Products, Medicinal Herbs).
2. Foreign trade in timber and products of the woodworking Industry. The "Paged" Foreign Trade Company (Plac Trzech Krzyży 18, Warsaw) has taken over the operations of "Cepede".
3. Foreign trade in iron and steel products, metallurgical semi-products and raw materials. "Impexmetal" — Exporters and Importers, (Wita Stwosza 7, Katowice) have taken over the operations of "Cynkprodukt", "Centrostal" and "Central Scrap Iron Bureau".
4. Foreign trade in hides, leather and leather products. "Skórimpex", Exporters and Importers of Raw Materials and Supplies for, and Products of the Leather Industry (Piotrkowska 260, Łódź) have taken over the functions of the Central Bureau for Raw Hides and the Trade Bureau of the Leather Industry.

LIST OF POLISH CENTRAL ORGANISATIONS FOR FOREIGN TRADE

Telegrams	Name of organisation and scope of activity	Postal address
ANIMEX Warszawa	"ANIMEX", NATIONAL ENTERPRISE (Independent Liability). Exporters and Importers of Animal Products, Fish and Fish Products	"Animex" Warszawa, Hoża 66/68
BALTONA Gdynia	"BALTONA", NATIONAL ENTERPRISE (Independent Liability) Shipchandlers	"Baltona" Gdynia, Pułaskiego 6
CEBILOZ Warszawa	"CEBILOZ", NATIONAL ENTERPRISE (Independent Liability). Exporters and Importers of Antifriction Bearings	"Cebiloz" Warszawa, Krak. Przedmieście 47/51
CENTROHARTWIG Warszawa	C. HARTWIG Ltd. International Forwarding Agents	C. Hartwig Warszawa, Hibnera 3
CENTROMOR Warszawa	CENTRALA MORSKA, NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Ships and Ship's Equipment	Centrala Morska Warszawa, Mokotowska 49
CENTROZAP Katowice	"CENTROZAP", NATIONAL ENTERPRISE (Independent Liability) Importers of Plant and Equipment for the Mining and Metallurgical Industries	"Centrozap" Katowice, Plebiscytowa 36
CETEBE Łódź	"CETEBE", NATIONAL ENTERPRISE (Independent Liability). Exporters and Importers of Textiles	"Cetebe" Łódź, Moniuszki 6
CIECH Warszawa	"CIECH" Ltd., GENERAL EXPORT AND IMPORT AGENCY FOR CHEMICALS	"Ciech" Warszawa, Jasna 10

Telegrams	Name of organisation and scope of activity	Postal address
DALOS Warszawa	"DAL" Ltd., INTERNATIONAL TRADING COMPANY Barter and Reexport Transactions	"Dal" Warszawa, Nowy Świat 40
DALSPO Warszawa	"DALSPO", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Foods, Fats and Edible Forest Products	"Dalspo" Warszawa, Filtrowa 61
DEKABIMEX Warszawa	"DOM KSIĄŻKI", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Books	"Dom Książki" Warszawa, Nowy Świat 50
ELEKTRIM Warszawa	"ELEKTRIM" Ltd., POLISH FOREIGN TRADE COMPANY FOR ELECTRICAL EQUIPMENT	"Elektrim" Warszawa, Sienna 32
HAZAPAGED Warszawa	"PAGED", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Timber and Products of the Woodworking Industry	"Paged" Warszawa, Plac Trzech Krzyży 18
IMEXFILM Warszawa	FILM POLSKI, NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Films	"Film Polski" Służba Zagranicznego Obrotu Filmów Warszawa, Marszałkowska 56
IMPEXMETAL Katowice	"IMPEXMETAL", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Metals and Products of the Metallurgical Industry	"Impexmetal" Katowice, Wita Stwosza 7
METALEX Warszawa	"METALEXPORT", NATIONAL ENTERPRISE (Independent Liability) Exporters of Machinery, Metal Manufactures and Electric Materials. Importers of rolling stock	"Metalexport" Warszawa, Mokotowska 49
MINEX Warszawa	"MINEX", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Minerals, Cement, Glass and Ceramics	"Minex" Warszawa, Kredytowa 4
MOTORIM Warszawa	"MOTOIMPORT", NATIONAL ENTERPRISE (Independent Liability) Importers of motor vehicles, agricultural machinery and aeronautical equipment	"Motoimport" Warszawa, Mazowiecka 13
PAPEXPORT Warszawa	"PAPEXPORT", NATIONAL ENTERPRISE (Independent Liability) Paper Exporters and Importers	"Papexport" Warszawa, Wspólna 50
PETROL Warszawa	CENTRALA PRODUKTÓW NAFTOWYCH, NATIONAL ENTERPRISE (Independent Liability) Export and Import of Crude Oil and Oil Products	Centrala Produktów Naftowych Warszawa, Rakowiecka 39
POLCARGO Gdynia	"POLCARGO", NATIONAL ENTERPRISE (Independent Liability) Cargo Experts and Supervisors	"Polcargo" Gdynia, Pułaskiego 6
POLIMEX Warszawa	"POLIMEX" Ltd., POLISH COMPANY FOR MACHINE IMPORTS	"Polimex" Warszawa, Czackiego 7/9
ROLIMPEX Warszawa	"ROLIMPEX", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Agricultural Products, Concentrated Fodder and Sugar	"Rolimpex" Warszawa, Hibnera 5
RUCH Warszawa	"RUCH", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Newspapers and Periodicals	"Ruch" Warszawa, Koszykowa 31
SKORIMPEX Łódź	"SKORIMPEX", NATIONAL ENTERPRISE (Independent Liability) Exporters and Importers of Raw Materials and Supplies for, and Products of the Leather Industry	"Skorimpex" Łódź, Piotrkowska 260
TABULATOR Warszawa	"TABULATOR" Ltd. Exporters and Importers of Office Machines and Equipment	"Tabulator" Warszawa, Szpitalna 8
TEXTILIMPORT Łódź	"TEXTILIMPORT", NATIONAL ENTERPRISE (Independent Liability) Importers of Raw Materials and Supplies for the Textile Industry	"Textilimport" Łódź, 22 Lipca 2
VARIMEX Warszawa	"VARIMEX" Ltd., POLISH COMPANY FOR FOREIGN TRADE Exporters of products of Decorative Art and Handicrafts, Christmas-tree ornaments, Household and Toilet Brushes, Artists' Brushes, Buttons, Rubber Goods, Pianos and Gramophone Records, Amberware, Postage Stamps	"Varimex" Warszawa, Wilcza 50/52
WĘGLOKOKS Katowice	CENTRALA ZBYTU WĘGLA, NATIONAL ENTERPRISE (Independent Liability) Coal Exporters	Centrala Zbytu Węgla Katowice, Kościuszki 30

Biblioteka Wyższej Szkoły Handlu Morskiego
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